CD AUTO CHANGER

KDC-CX89/CMP59FM
KDC-CPS89MP/C719MP

SERVICE MANUAL

KENWOOD

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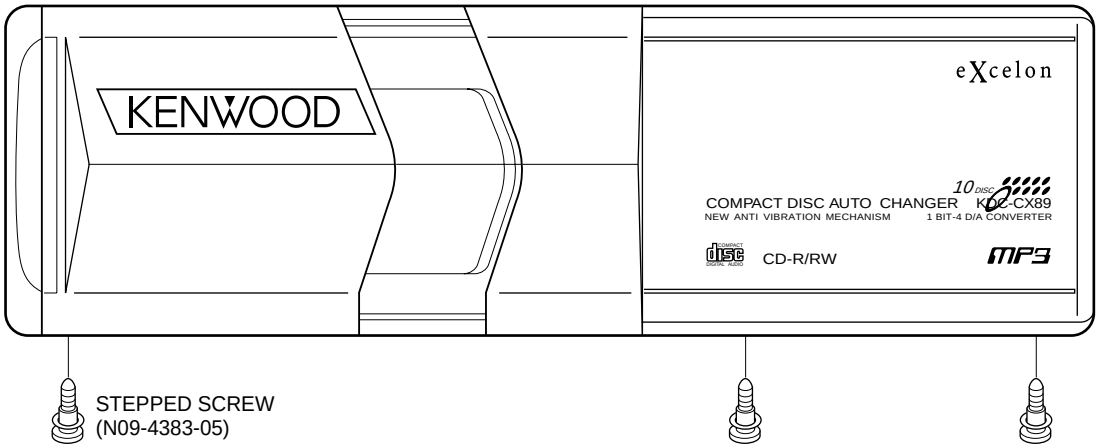
B51-7896-00 (4) 3404

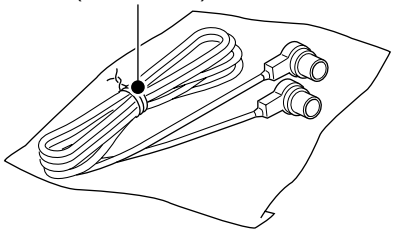
The MECHANISM OPERATION is the same as model KDC-C660.
Please refer to the service manual of model KDC-C660 (B51-7105-00).

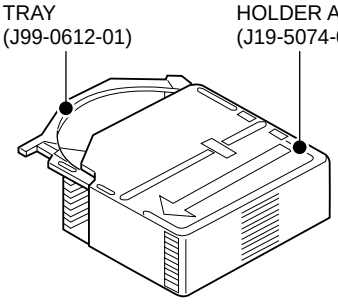
Service jig	Parts No.
For initial position setting	W05-0635-00

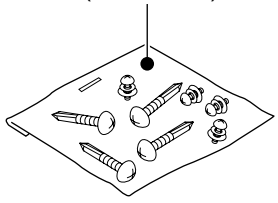
●KDC-CX89

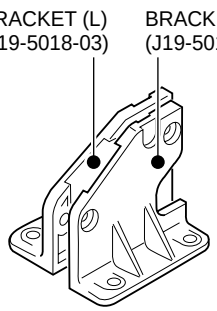


When transporting these models, always attach CAUTION CARD and STEPPED SCREW (for transportation).

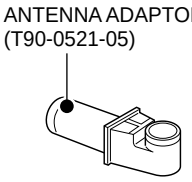


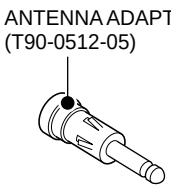


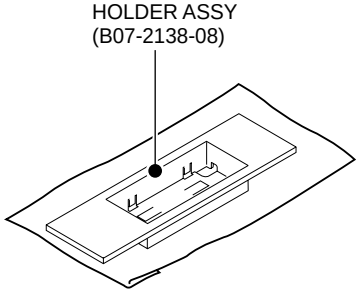


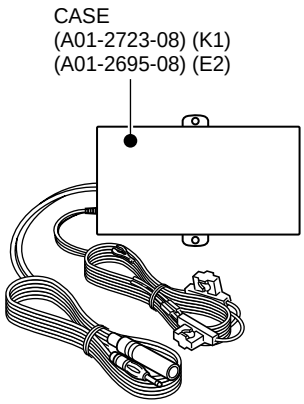


For KDC-CMP59FM









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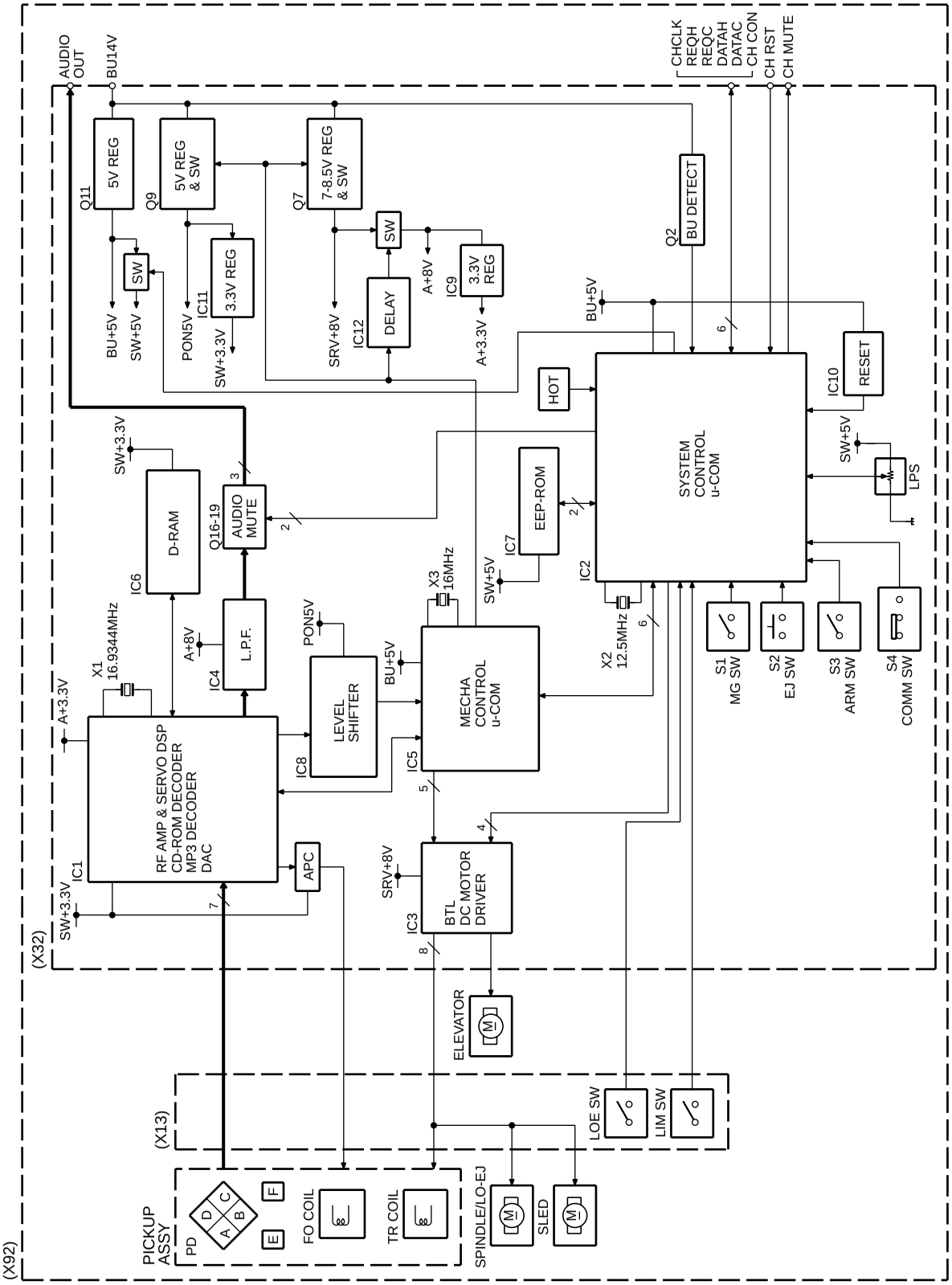
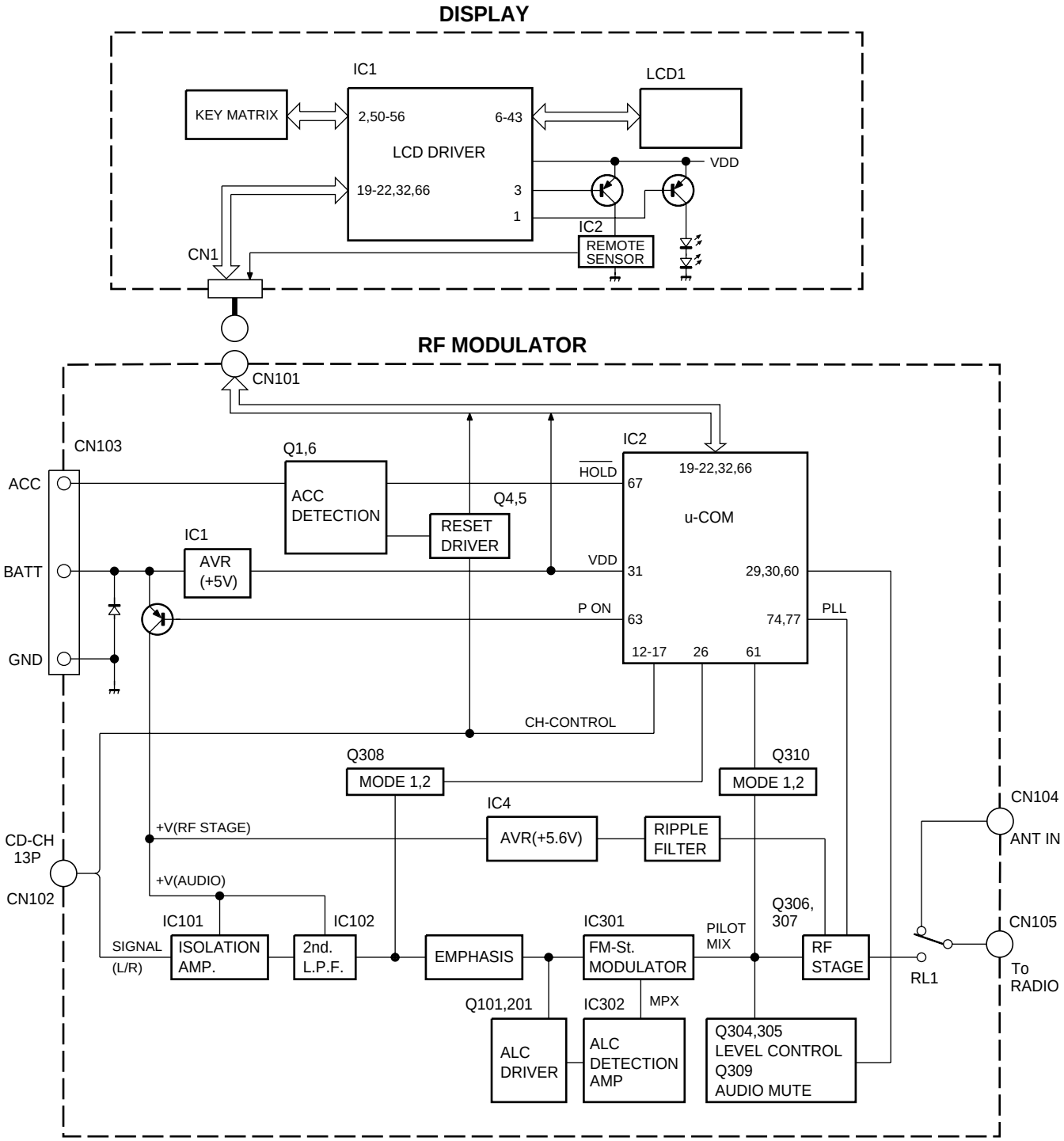
BLOCK DIAGRAM



BLOCK DIAGRAM

For KDC-CMP59FM



COMPONENTS DESCRIPTION

●CD PLAYER UNIT (X32-5340-00)

Ref No.	Component Name	Application/Function	Operation/Condition/Compatibility
IC1	UPD63760GJ	SERVO IC	
IC2	UPD784214GC144	SYSTEM μ-COM	
IC3	LA6576	MOTOR DRIVER	Controls the actuator and drives the motor.
IC4	NJM4580M1	AUDIO AMP	LPF
IC5	703033AYGC-J01	MECHA μ-COM	
IC6	IS41LV16257 or MSM51V4265EP70	D-RAM	
IC7	BR24C01AF-W or M24C01-WMN6T	EEPROM	MD deck ascent/descent home position memory
IC8	TC74HCT7007AF	LEVEL SHIFTER	
IC9	TAR5S33	POWER SUPPLY IC	Audio system 3.3V power supply
IC10	S-80830ANNP	RESET IC	System microcomputer reset
IC11	L88M33T	3-PIN REGULATOR	Digital system 3.3V power supply
IC12	TC7SH32FU	LOGIC IC	Creates the audio system power supply timing
Q1	MCH6101	APC TRANSISTOR	Controls the laser current
Q2	DTC124EUA or UN5212	BU DETECTION	
Q3	DTA143EUA	SERVO 8V SW	
Q4	DTC124EUA UN5212		
Q5	DTC124EUA UN5212	7/9V SW	7/9V switching control
Q6	2SC4081 2SD1819A	SERVO 8V AVR	
Q7	2SB1548(P)		
Q8	2SC4081 2SD1819A	PON 5V AVR	
Q9	2SB1548(P)		
Q10	2SC4081 2SD1819A	BU 5V AVR	
Q11	2SB1202		
Q12	DTC124EUA UN5212	MUTE DRIVER	
Q13	DTC124EUA UN5212	CH-RST SW	
Q14	DTC124EUA UN5212	CH-CON SW	
Q15	DTA143EUA	CH-MUTE SW	
Q16	DATA124EUA UN5112	0bit MUTE	Rch
Q17	DATA124EUA UN5112	0bit MUTE	Lch
Q18	DTC343TK	0bit MUTE	Lch
Q19	DTC343TK	0bit MUTE	Rch
Q20	2SB1295	SW 5V SW	
Q21	DATA143EUA	PON 5V SW	
Q22	DTC124EUA		
Q23	2SB1295	AUDIO 8V SW	
Q24	UN5212		

COMPONENTS DESCRIPTION

●RF MODULATOR UNIT

Ref No.	Component Name	Application/Function	Operation/Condition/Compatibility
IC1	UPC7805AHF	BU 5V AVR	While BACKUP is applied, AVR outputs +5V.
IC2	LC72329-9274	System MI-COM.	System control
IC4	NJM78L05UA	5V AVR	Power supply for FM modulator and RF amplifier
IC101	NJM2060M	Isolation amp.	
IC102	NJM4565MD	Low pass filter	
IC301	BA1405F	FM ST modulator	
IC302	NJM4565MD	1/2 VCC driver, ALC detection amp.	
Q1	DTC124EK	ACC detection	When Q4 is turned on , Q1 is turned on during ACC applied.
Q2	2SA1782(T,U)	POWER SW	When Q3's base goes "Hi", Q2 is turned on, and RF modulator circuit is working.
Q3	DTC124EK		
Q4	DTC143TK	Reset SW	When RESET SW on display unit is pressed,Q4,Q1 and Q6 are turned off, and IC2 is holding.
Q5	DTC143TK	CH RESET SW	When RESET SW on display unit is pressed, Q5 is turned off , and SYSTEM RESET signal is outputted to CD changer.
Q6	DTA124EK	Hold detection SW	When RESET SW on display unit is pressed or ACC is OFF , Q6 is turned off ,and IC2 is holding.
Q8	DTC143TK	Relay driver	FM modulator output / Vehicles antenna input switching. When a base goes "Hi" , FM modulator output is selected.
Q9	2SC4640(T,U)	Ripple filter	Power supply for RF amplifier
Q101	2SK2158	ALC control SW	
Q201	2SK2158		
Q303	2SA1162(GR)	Pilot mix amp.	
Q304	2SK2158	Level control SW	Level1/2 : OFF, Level3/4 : ON
Q305	2SK2158	Level control SW	Level2/4 : OFF, Level1/3 : ON
Q306	2SK508L	RF oscillator buffer	
Q307	2SC2714(Y)	RF amp.	
Q308	2SK2158	Mode(1/2) SW	Mode1 : ON, MODE2 : OFF
Q309	2SK2158	Audio mute	POWER ON mode : OFF, POWER OFF mode : ON
Q310	2SK2158	Mode(1/2) SW	Mode1 : OFF, Mode2 : ON

●DISPLAY UNIT

Ref No.	Component Name	Application/Function	Operation/Condition/Compatibility
IC1	LC75852W	LCD driver with key-matrix	
IC2	PNA4602M	Remote control light sensor	
Q1	DTC144EK	LED ON/OFF SW	When Q1's base goes "Hi", Q2 is turned on, and LED is turned on.
Q2	DTB123YK		
Q3	DTA144EK	Key-matrix permition SW	Ready on key-matrix
Q4	DTC144EK	IC2 ON/OFF SW	When Q4's base goes "Hi",Q5 is turned on, and 5V is supplied to remote control sensor.
Q5	DTA114EK		

MICROCOMPUTER'S TERMINAL DESCRIPTION

●IC2 (CD PLAYER UNIT)

PIN No.	Pin Name	I/O	Description	Processing Operation
1	PON	O	PON output	H: Power OFF L: Power ON
2	NC	-		
3	$\overline{\text{MSTOP}}$	O	Mechanism stop signal	L: Mechanism stop
4,5	NC	-		
6	$\overline{\text{RST}}$	O	Mechanism µ-com reset signal	L: Reset
7	$\overline{\text{MUTEIN L}}$	I	Lch MUTE signal input	L: Mute ON
8	$\overline{\text{MUTEIN R}}$	I	Rch MUTE signal input	L: Mute ON
9	VDD	-	Positive power supply voltage connection terminal	
10	X2	-	Oscillator connection terminal 2	
11	X1	I	Oscillator connection terminal 1	
12	VSS		Ground connection terminal	
13	XT2		Sub clock resonator connection terminal 2	
14	XT1		Sub clock resonator connection terminal 1	
15	RESET	I	Reset input	
16	NC	-		
17	MGSW	I	Magazine switch	H: Magazine in
18	EJSW	I	Eject switch	H: Switch ON
19	COMMSW	I	Communication Old/New switch input	H: New L: Old
20	NC	-		
21	CH-CON	I	Changer control input from H/U	H: System ON
22	BUDET	I	Momentary power down detection	H: Momentary power down detection ON
23	AVDD	-	A/D converter analog power supply terminal	
24	AVREF0	I	A/D converter reference voltage input	
25	HOT	I	Rise in temperature detection	4V(90°C) or greater : detection 4V or less : Not detection
26	LPS	I	Mechanical deck position detection	
27	LOESW	I	Loading complete switch	L: Loading complete
28	NC	-		
29	TOFF	I	Tracking off mode	H: Tracking OFF
30	SRVSEL	I	Servo active mode	H: Servo mode
31	SLNSA	I	Sled non-sensitive area ON/OFF	L: Non-sensitive ON
32	ADJSEL	I	Servo automatic adjustment ON/OFF	H:Automatic adjustment OFF
33	AVSS	-	A/D converter reference ground terminal	
34,35	NC	-		
36	AVREF1	-	A/D converter reference voltage	
37-39	NC	-		
40	DATAH	I	Data input from H/U	
41	DATAC	O	Data output from the changer	
42	HCLK	I/O	Communication clock with H/U	
43	REQC	O	Communication request to H/U	
44	CHMUTE	O	Audio mute output to H/U	L: Mute ON
45	$\overline{\text{MUTE L}}$	O	Lch audio mute output	L: Mute ON
46	$\overline{\text{MUTE R}}$	O	Rch audio mute output	L: Mute ON
47-71	NC	-		
72	VSS	-	Ground connection terminal	
73-80	NC	-		
81	VDD	-	Positive power supply connection terminal	
82	NC	-		
83	REQH	I	Communication request from H/U	
84	SP/LO+	O	Spindle/Loading control terminal	

MICROCOMPUTER'S TERMINAL DESCRIPTION

PIN No.	Pin Name	I/O	Description	Processing Operation
85	SP/LO-	O	Spindle/Loading control terminal	
86	ELV+	O	Mechanism deck ascent/descent terminal	
87	ELV-	O	Mechanism deck ascent/descent terminal	
88,89	NC	-		
90	TEST1	I	TEST mode terminal	
91	TEST2	I	TEST mode terminal	
92	8V/7V	O	Mechanism movement driver IC power supply voltage control	
93	EEPWR	I	EEPROM Write mode	H : Write L : normal
94	TEST/VPP	I	Flash ROM program mode	
95	DATA	I/O	Mechanism µ-com communication serial data input/output	
96	$\overline{CLK}$	I/O	Mechanism µ-com communication serial clock input/output	
97	SDA	I/O	DATA input/output with EEPROM	
98	SCL	O	Clock output to EEPROM	
99	NC	-		
100	ARMSW	I	Arm switch	H : Arm switch ON

MICROCOMPUTER'S TERMINAL DESCRIPTION

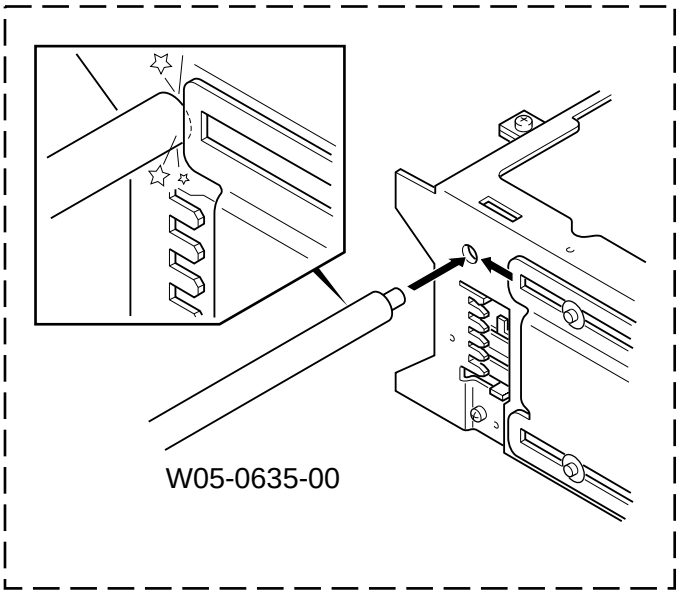
●IC2 (RF MODULATOR UNIT) For KDC-CMP59FM

PIN No.	Pin Name	I/O	Description	Processing Operation
1	XIN	I	Main clock resonator connection terminal	
2	TEST2	I	Test mode terminal 2 for test mode	Not used (pull down to GND lines.)
3,4	PG3,PG2	I		Not used (pull down to GND lines.)
5	PG1	I		Not used (pull up to +5V lines.)
6	PG0	I		Not used (pull down to GND lines.)
7-9	PH3-PH1	O		Not used (N.C.)
10	PH0 MUTE1	O		Not used (N.C.)
11	PF3 MUTE0	O		Not used (N.C.)
12	PF2 $\overline{\text{REQC}}$	I	Communication request input from CH	"Lo" : Communication requested
13	PF1 $\overline{\text{REQH}}$	O	Communication request output to CH	"Lo" : Communication requested
14	PF0 CHCON	O	Control output to CH	"Hi" : Operation mode, "Lo" : Standby mode
15	PE3 DATA IN	I	Data input from CH	
16	PE2 DATA OUT	O	Data output to CH	
17	PE1 $\overline{\text{SCK}}$	O	Clock output to CH	
18	PE0	O		Not used (N.C.)
19	PD3 DATA OUT	O	Data output to LCD	
20	PD2 CLK	O	Clock output to LCD	
21	PD1 RST	O	Reset output to LCD	"Lo" : Reset
22	PD0 CE	O	CE output to LCD	
23-25	PC3-PC1			Not used (N.C.)
26	PC0 SEPA	O	Separation select output	"Hi" : Mode1, "Lo" : Mode2
27,28	PB3,PB2	O		Not used (N.C.)
29	PB1 GAIN1	O	GAIN1 output	"Hi" : Level 1/3, "Lo" : Level 2/4
30	PB0 GAIN2	O	GAIN2 output	"Hi" : Level 3/4, "Lo" : Level 1/2
31	VDD+5V	-	Positive power supply connection terminal	Connected to +5V lines.
32	PA3 DATA IN	I	Data input from LCD	
33-35	PA2-PA0	I		Not used (connected to GND lines.)
36	PI31 S28	O		Not used (N.C.)
37	PI21 S27	O		Not used (N.C.)
38	PI11 S26	O		Not used (N.C.)
39	PI01 S25	O		Not used (N.C.)
40-58	S24-S6	O		Not used (N.C.)
59	ALC LOW S5	O		Not used (N.C.)
60	MUTE S4	O	Mute output	"Hi" : POWER OFF mode "Lo" : POWER ON mode
61	SEP ATT S3	O	Separation attenuator output	"Hi" : Mode2, "Lo" : Mode1
62	RELAY S2	O	Relay SW control	"Hi" : RF modular output, "Lo" : Vehicle antenna output
63	P ON S1	O	P ON output	"Hi" : RF modulator circuit is active.
64,65	COM2,COM1	O		Not used (N.C.)
66	REMO $\overline{\text{INT}}$	I	Remote control sensor input	
67	$\overline{\text{HOLD}}$	I	Hold input	"Lo" : Microprocessor stop
68	$\overline{\text{RES}}$	I		Not used (pull up to +5V lines.)
69	AOI	I		Not used (pull down to GND lines.)
70	HCTR	I		Not used (pull down to GND lines.)
71	LCTR	I		Not used (pull down to GND lines.)
72	$\overline{\text{SNS}}$	I		Not used (pull down to GND lines.)
73	VDD	-	Positive power supply connection terminal	Connected to +5V lines.
74	FMIN	I	FM input	
75	AMIN	I	AM input	Not used (pull down to GND lines.)
76	VSS	-	Ground connection terminal	Connected to GND lines.
77	EO1	O	FM frequency control output	
78	EO2	O		Not used (N.C.)
79	TEST1	I	Test mode terminal 1 for test mode	Not used (pull down to GND lines.)
80	XOUT	-	Main clock resonator connection terminal	

ADJUSTMENT

L.P.S initial position adjustment procedure

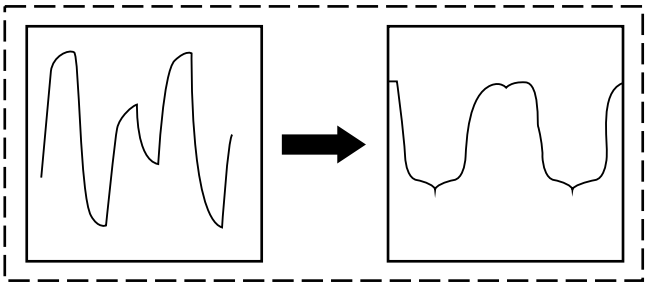
1. Connect the changer to the H/U.
2. While holding the magazine eject button of the changer, press the reset button of the H/U.
3. After about 3 seconds, release the magazine eject button.
4. Press the SRC button of the H/U to enter the CD-CH mode, and the H/U's display section indicates "E-88".
5. Move the mechanism deck to around the 1st stage by pressing the DISC- or DISC+ button.
6. Insert the adjustment tool (W02-0635-00) into the tool hole on the changer mechanism.
7. Then press the DISC+ button to move the mechanism deck until the mechanism's slider hits the adjustment tool.
8. When the motor locks (stops), press the REPEAT key of the H/U.
   When the REPEAT key is pressed, the mechanism moves automatically to the 1st stage and the initial position adjustment completes. (The data is written in the EEPROM at this time.)



For KDC-CMP59FM

RF MODULATOR UNIT

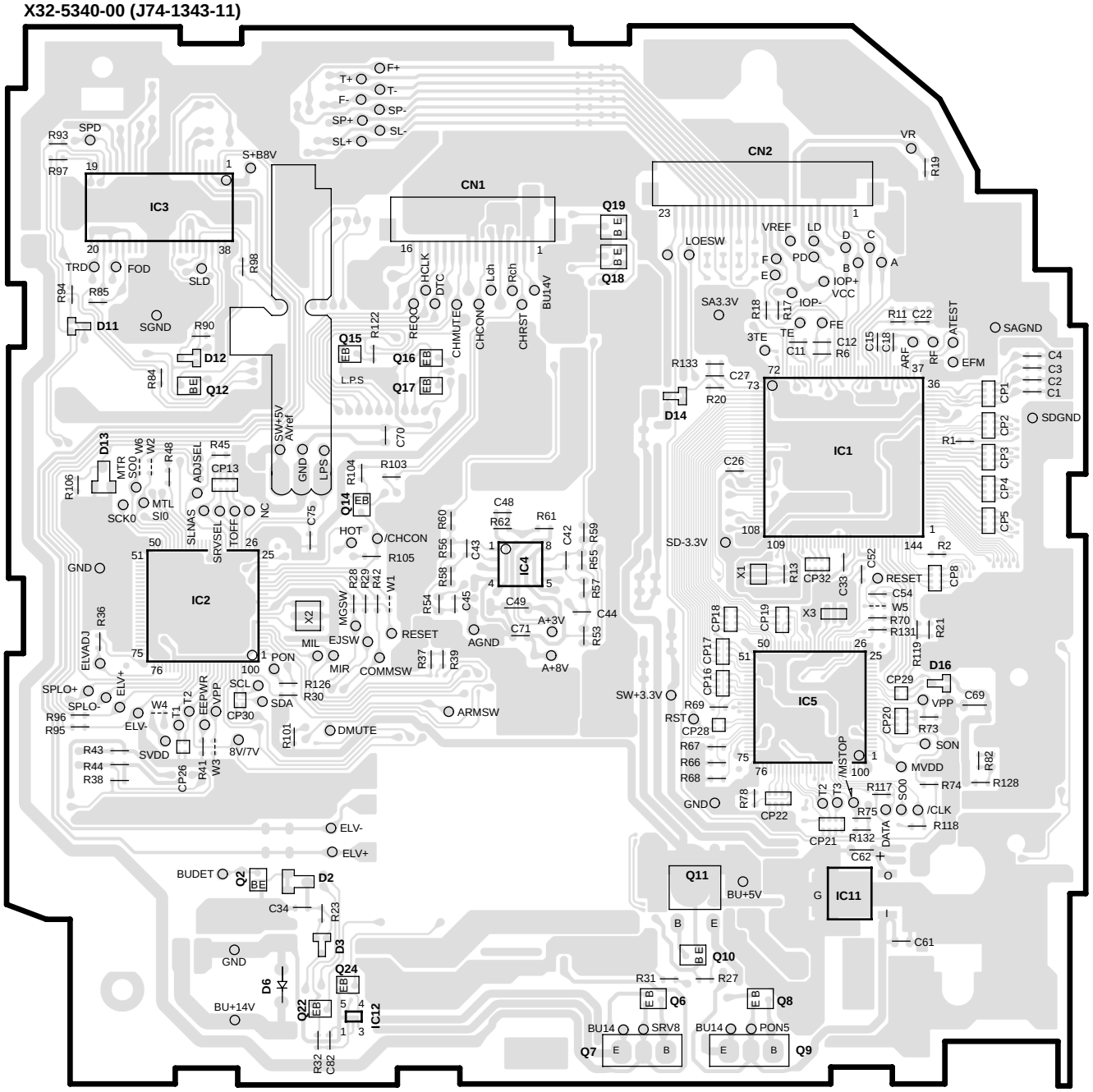
1. DC balance adjustment (VR301)
   While observing the waveform with an oscilloscope at pin 13 of IC301, adjust VR301 to minimize the waveform level.
2. PLL control voltage adjustment (VC301)
   First set the transmission frequency to ∗87.9MHz with the commander, then adjust VC301 so that the DC Voltage at the +pole of C317, measured using a multi-meter or digital tester, is +3V (±0.1V).
   ∗NOTE: E type is 87.7MHz.
3. Modulation level adjustment (VR303)
   The method uses a standard receiver or tuner.
   Adjust VR303 so that the output level from the standard receiver or tuner is as specified.



PC BOARD (Component side view)

CD PLAYER UNIT (X32-5340-00)

X32-5340-00 (J74-1343-11)



(X32-5340-00)

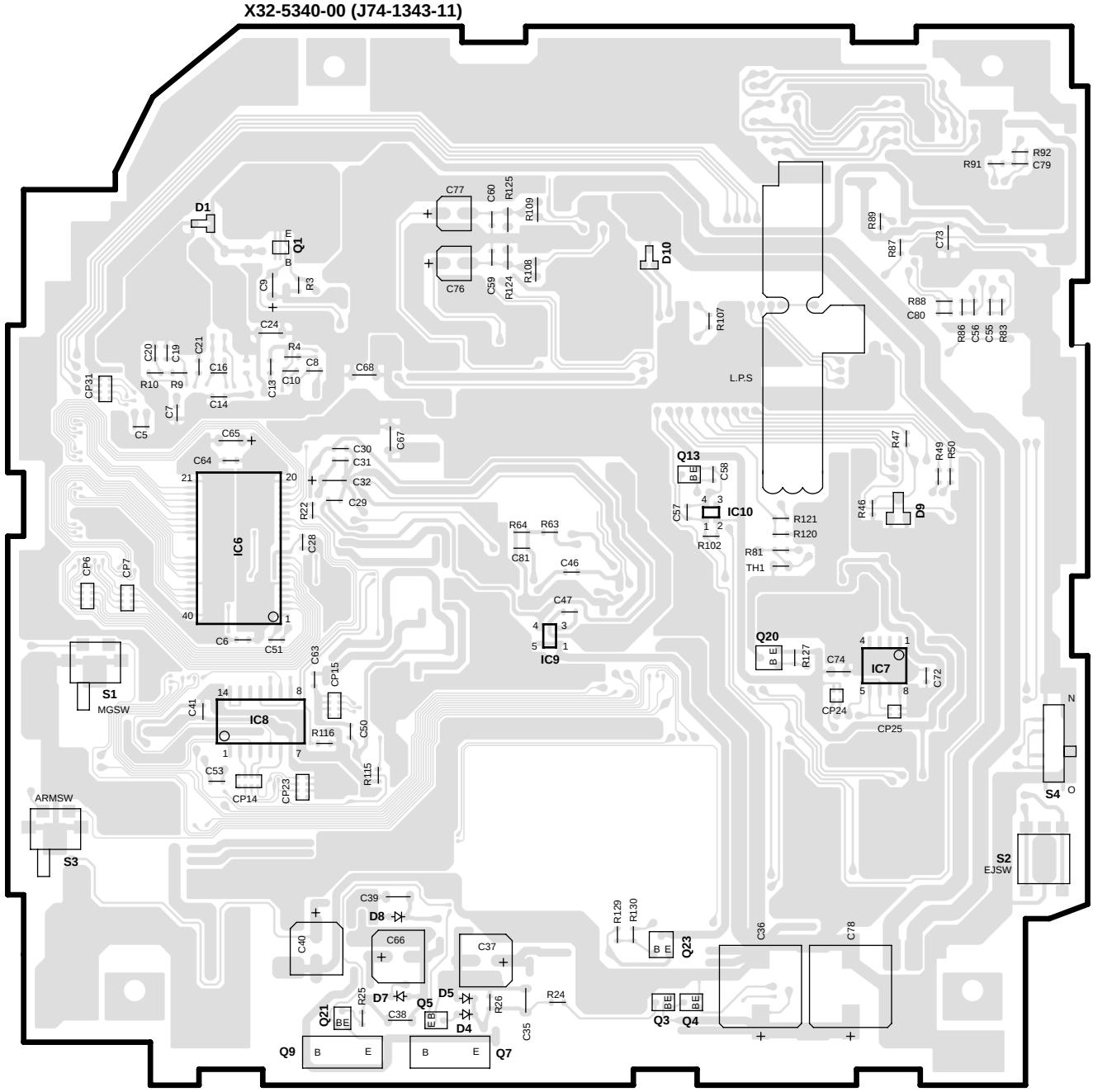
Ref. No.	IC1	IC2	IC3	IC4	IC5	IC11	IC12	Q2	Q6	Q8	Q10
Address	3D	4B	2A	4C	4D	5D	5B	5B	5D	5D	5D
Ref. No.	Q11	Q12	Q14	Q15	Q16	Q17	Q18	Q19	Q22	Q24	
Address	5D	3B	3B	3B	3B	3B	2C	2C	5B	5B	

Refer to the schematic diagram for the values of resistors and capacitors.

PC BOARD (Foil side view)

CD PLAYER UNIT (X32-5340-00)

X32-5340-00 (J74-1343-11)



(X32-5340-00)

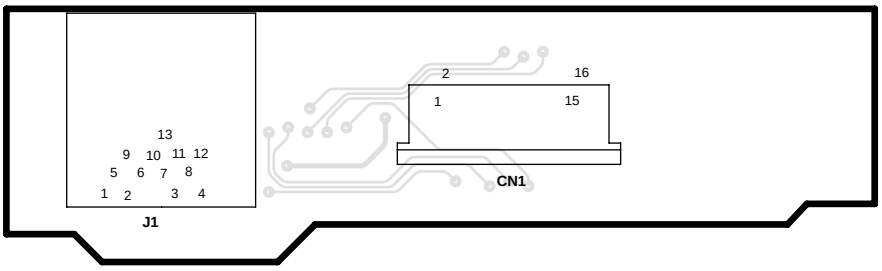
Ref. No.	IC6	IC7	IC8	IC9	IC10	Q1	Q3	Q4	Q5	Q7	Q9	Q13	Q20	Q21	Q23
Address	3G	4I	4G	4H	3I	2G	5H	5I	5G	5H	5G	3I	4I	5G	5I

Refer to the schematic diagram for the values of resistors and capacitors.

PC BOARD (Component side view)

SUB CIRCUIT UNIT (X13-9840-00)

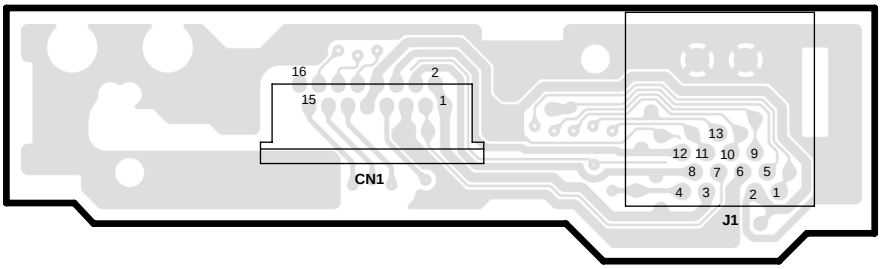
X13-9840-00 (J74-1100-02)



PC BOARD (Foil side view)

SUB CIRCUIT UNIT (X13-9840-00)

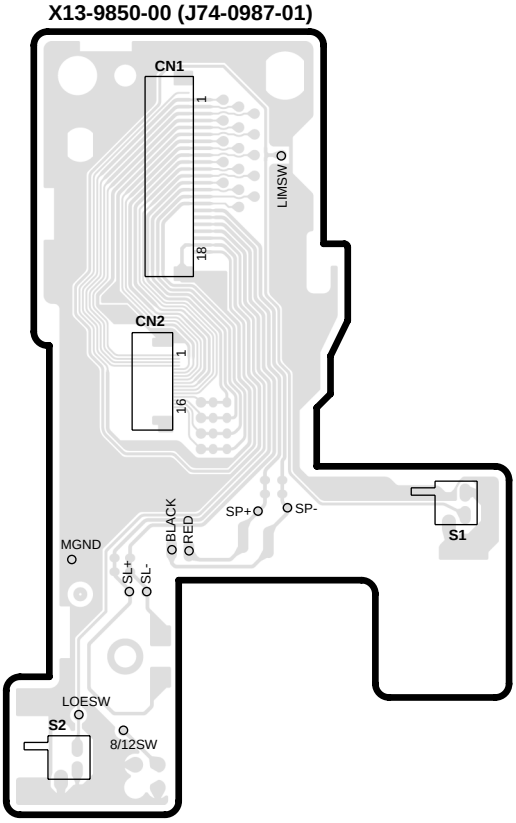
X13-9840-00 (J74-1100-02)



PC BOARD (Component side view)

SUB CIRCUIT UNIT (X13-9850-00)

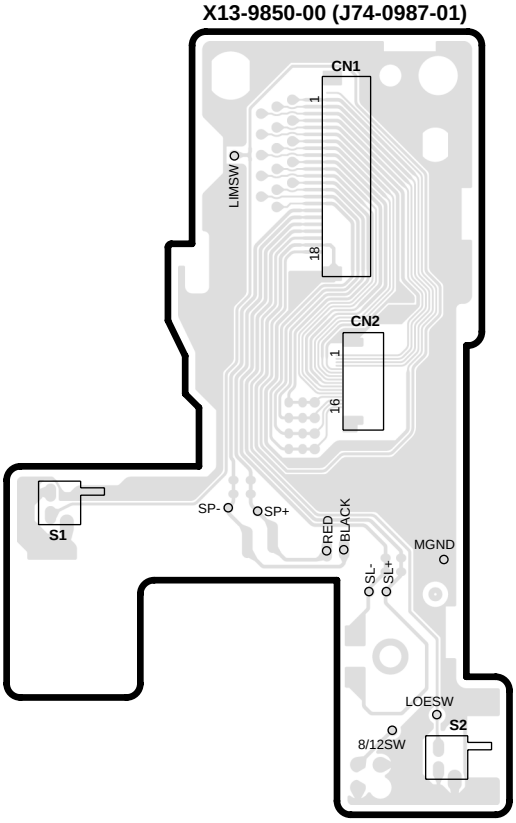
X13-9850-00 (J74-0987-01)



PC BOARD (Foil side view)

SUB CIRCUIT UNIT (X13-9850-00)

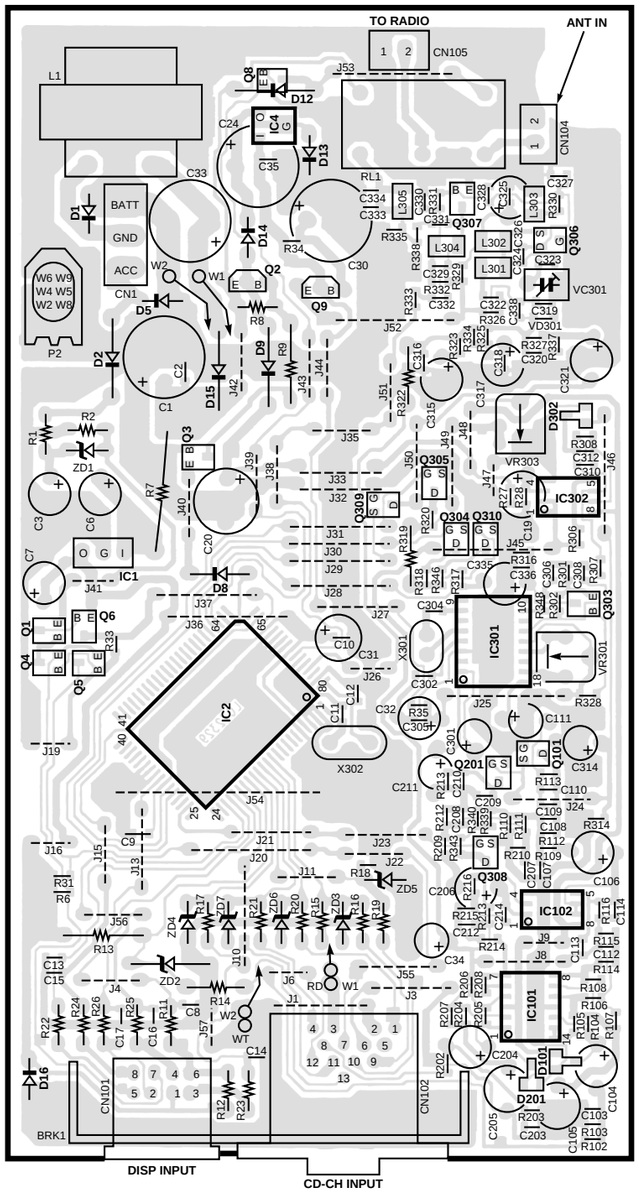
X13-9850-00 (J74-0987-01)



Refer to the schematic diagram for the values of resistors and capacitors.

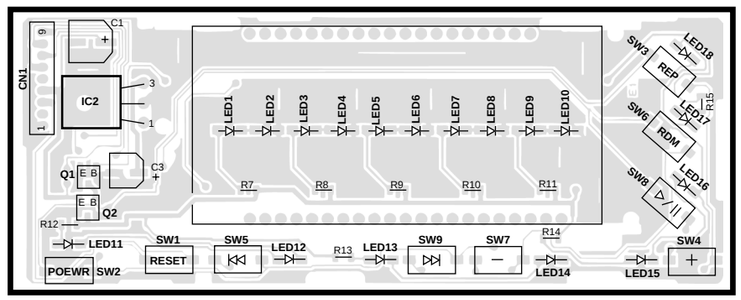
PC BOARD (Component side view) For KDC-CMP59FM

RF MODULATOR UNIT (W02-321X-XX)



Ref. No.	Address
IC1	3Q
IC2	4R
IC4	2R
IC101	5S
IC102	5S
IC301	4S
IC302	3S
Q1	4Q
Q2	2R
Q3	3Q
Q4	4Q
Q5	4Q
Q6	3Q
Q8	1R
Q9	2R
Q101	4S
Q201	4S
Q303	3S
Q304	3S
Q305	3S
Q306	2S
Q307	2S
Q308	4S
Q309	3R
Q310	3S

DISPLAY UNIT

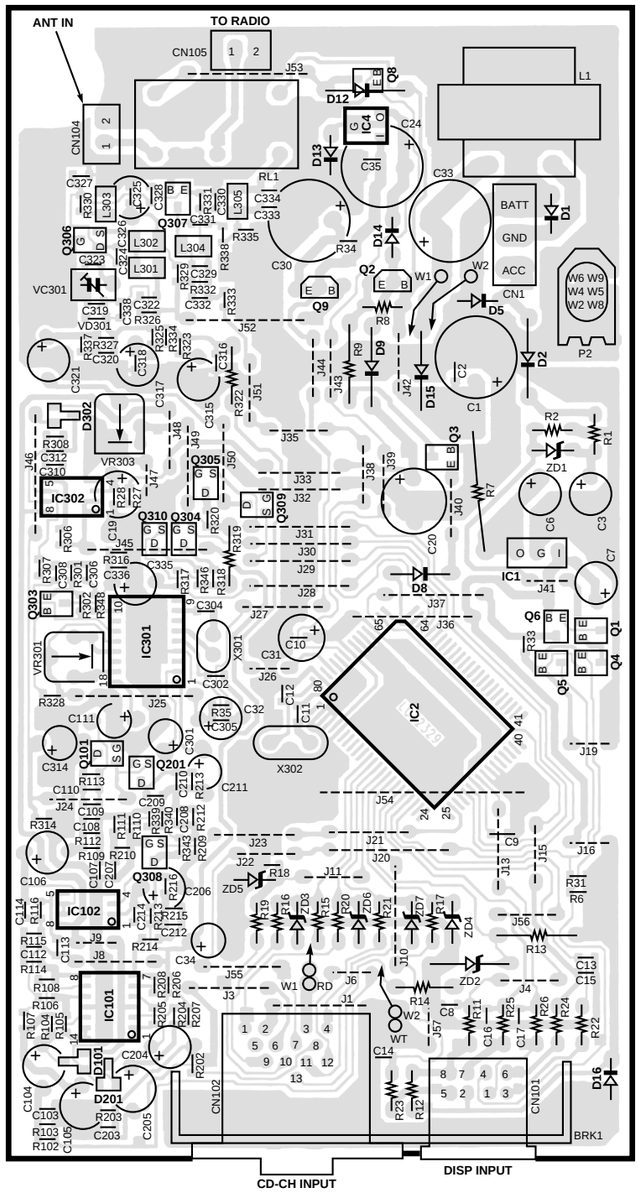


Ref. No.	Address
IC2	6Q
Q1	7Q
Q2	7Q

Refer to the schematic diagram for the values of resistors and capacitors.

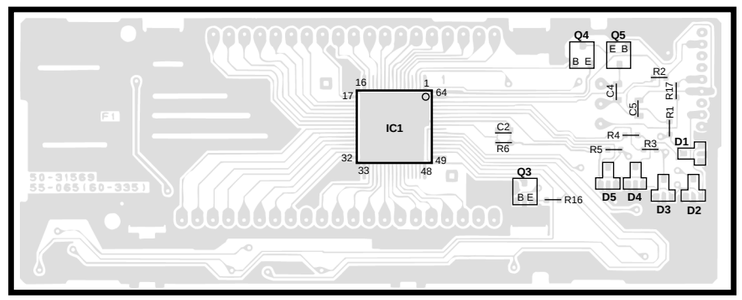
PC BOARD (Foil side view) For KDC-CMP59FM

RF MODULATOR UNIT (W02-321X-XX)



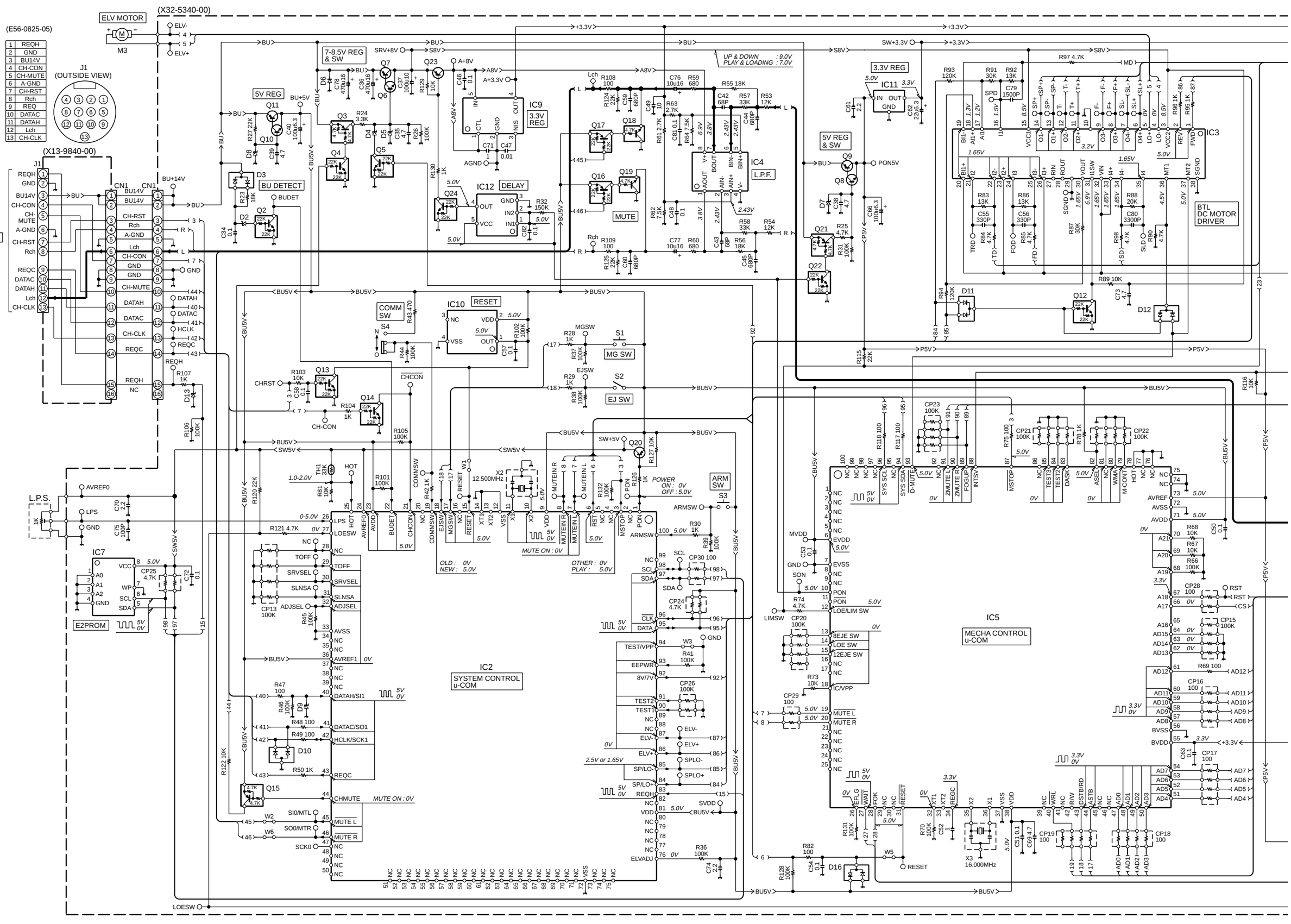
Ref. No.	Address
IC1	3X
IC2	4W
IC4	2W
IC101	5V
IC102	5V
IC301	4V
IC302	3V
Q1	4X
Q2	2W
Q3	3X
Q4	4X
Q5	4X
Q6	3X
Q8	1W
Q9	2W
Q101	4V
Q201	4W
Q303	3V
Q304	3W
Q305	3W
Q306	2V
Q307	2W
Q308	4V
Q309	3W
Q310	3V

DISPLAY UNIT



Ref. No.	Address
IC1	6W
Q3	7X
Q4	6X
Q5	6X

Refer to the schematic diagram for the values of resistors and capacitors.


(E56-0825-05)
1 REQH
2 GND
3 BU14V
4 CH-CON
5 CH-MUTE
6 A-GND
7 CH-RST
8 Rch
9 REQ
10 DATAC
11 DATAH
12 Lch
13 CH-CLK
J1
(OUTSIDE VIEW)
ELV MOTOR
M3
ELV-
ELV+
(X32-5340-00)
(X13-9840-00)
(E30-4291-05)
CN1
BU14V
CH-RST
Rch
A-GND
Lch
CH-CON
GND
CH-MUTE
DATAH
DATAC
HCLK
REQC
REQH
NC
BU+14V
7-8.5V REG & SW
5V REG
BU DETECT
BUDET
3.3V REG
5V REG & SW
BTL DC MOTOR DRIVER
IC3
IC4
L.P.F.
MUTE
IC9
IC10
RESET
IC11
IC12
DELAY
COMM SW
MG SW
EJ SW
ARM SW
POWER ON : 0V OFF : 5.0V
UP & DOWN : 9.0V
PLAY & LOADING : 7.0V
OLD : 0V NEW : 5.0V
MUTE ON : 0V
OTHER : 0V PLAY : 5.0V
L.P.S.
E2PROM
IC7
IC2
SYSTEM CONTROL u-COM
IC5
MECHA CONTROL u-COM
X2 12.500MHz
X3 16.000MHz
LOESW
RESET

K L M N O P Q R S T

IC1

RF AMP, SERVO DSP,
CD-ROM DECODER,
MP3 DECODER & DAC

IC6
D-RAM

IC8
LEVEL SHIFT

SUB-CIRCUIT UNIT (X13-9850-00)

PU1 (X92-)

(J84-0141-05)

LC3

SLED M2

SPINDLE M1

IC1	: UPD63760GC	Q1	: MCH6101	D1,10,14	: DAP202U
IC2	: UPD784214GC	Q2,4,5,12-14,22,24	: DTC124EUA	D2,9,13	: MA3056-M
IC3	: LA6576	Q3,15,21,23	: DTA143EUA	D3,16	: DA204U
IC4	: NJM4580M	Q6,8,10	: 2SC4081	D4	: MA8075-M
IC5	: UPD703033YGC	Q7,9	: 2SB1548(P)	D5	: MA8091-M
IC6	: IS41LV16257-50T	Q11	: 2SB1202	D6	: 1SR154-400
IC7	: BR24C01AF-W	Q16,17	: DTA124EUA	D7,8	: MA8056-M
IC8	: TC74HCT7007AF	Q18,19	: DTC343TK	D11,12	: DAN202U
IC9	: TAR5S33	Q20	: 2SB1295		
IC10	: S-80830ANNP				
IC11	: L88M33T				
IC12	: TC7SH32FU				

2SC4640T/U

DTA124EK DTC124EK DTC343TK
DTA144EK DTC143TK 2SB1295
DTB123YK DTC144EK 2SD1819A

2SB1202

2SB1548

2SC4081

DTA124EUA
DTA143EUA
DTC124EUA

MA142WA
MA142WK
UN5212

TC74HCT7007AF

NJM2060M

DAN202U

NJM4565MD

BA1405F

BR24C01AF-W

L88M33T

UPC7805AHF

DAP202U
DA204K
DA204U

CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list).
⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

•DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

KDC-CX89/CMP59FM
KDC-C719MP/CPS89MP

KENWOOD

RF MODULATOR UNIT

IC1	: UPC7805AHF
IC2	: LC72329-9274
IC4	: NJM78L05UA
IC101	: NJM2060M
IC102,302	: NJM4565MD
IC301	: BA1405F
Q1,3	: DTC124EK
Q2	: 2SA1782(T,U)
Q4,5,8	: DTC143TK
Q6	: DTA124EK
Q9	: 2SC4640(T,U)
Q101,201,304,305,308-310	: 2SK2158
Q303	: 2SA1162(GR)
Q306	: 2SK508L
Q307	: 2SC2714(Y)
D1,5,14	: DSK10C-ET1
D2,15	: DSK10C-BT
D8,9,12,13,16	: 1SS131
D101,201,302	: DA204K
VD301	: HVU306A-3
ZD1-7	: MTZ6.2J(B)

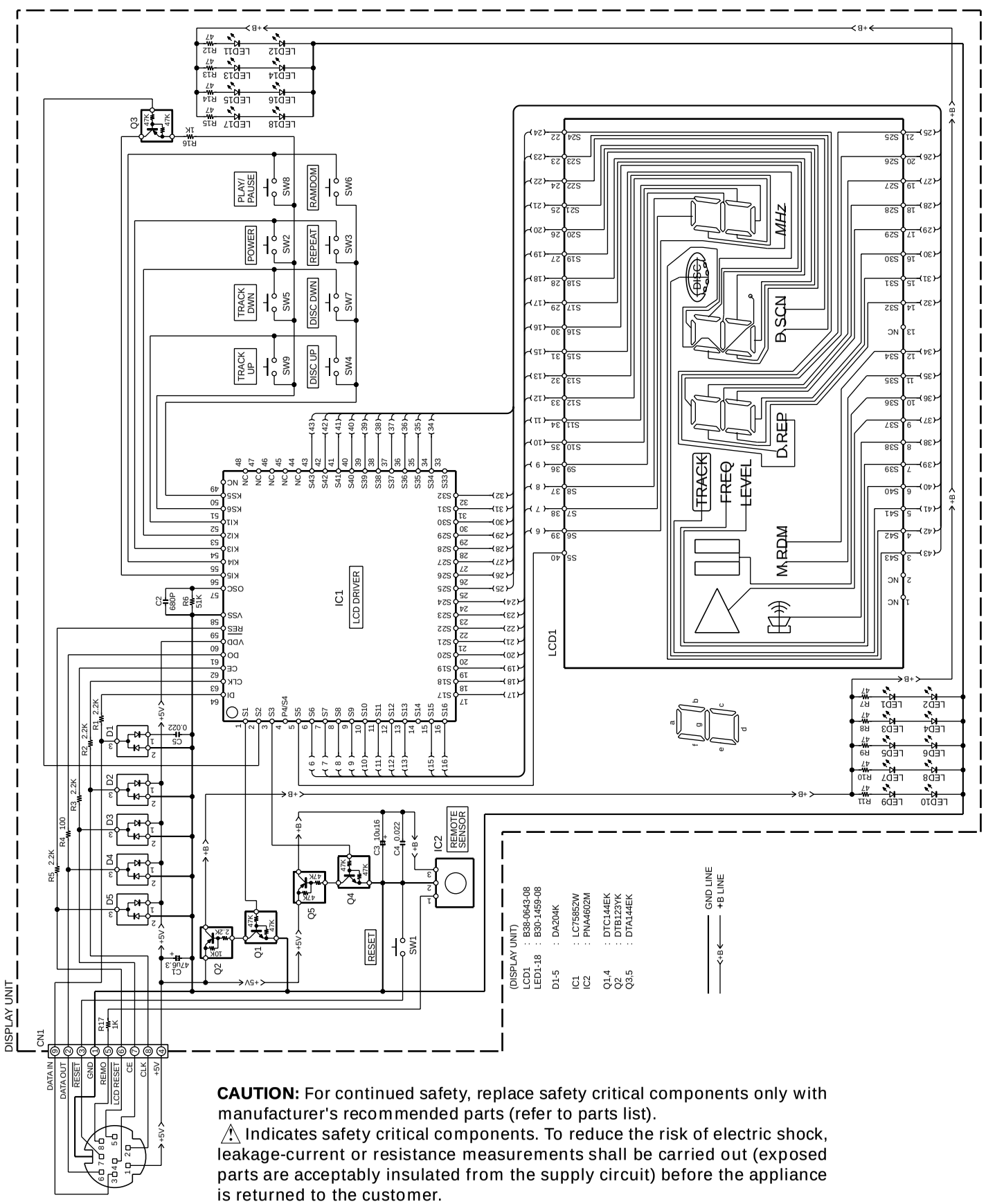
SIGNAL LINE
GND LINE
+B LINE

CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

•DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

KDC-CMP59FM

KENWOOD



CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list).
⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

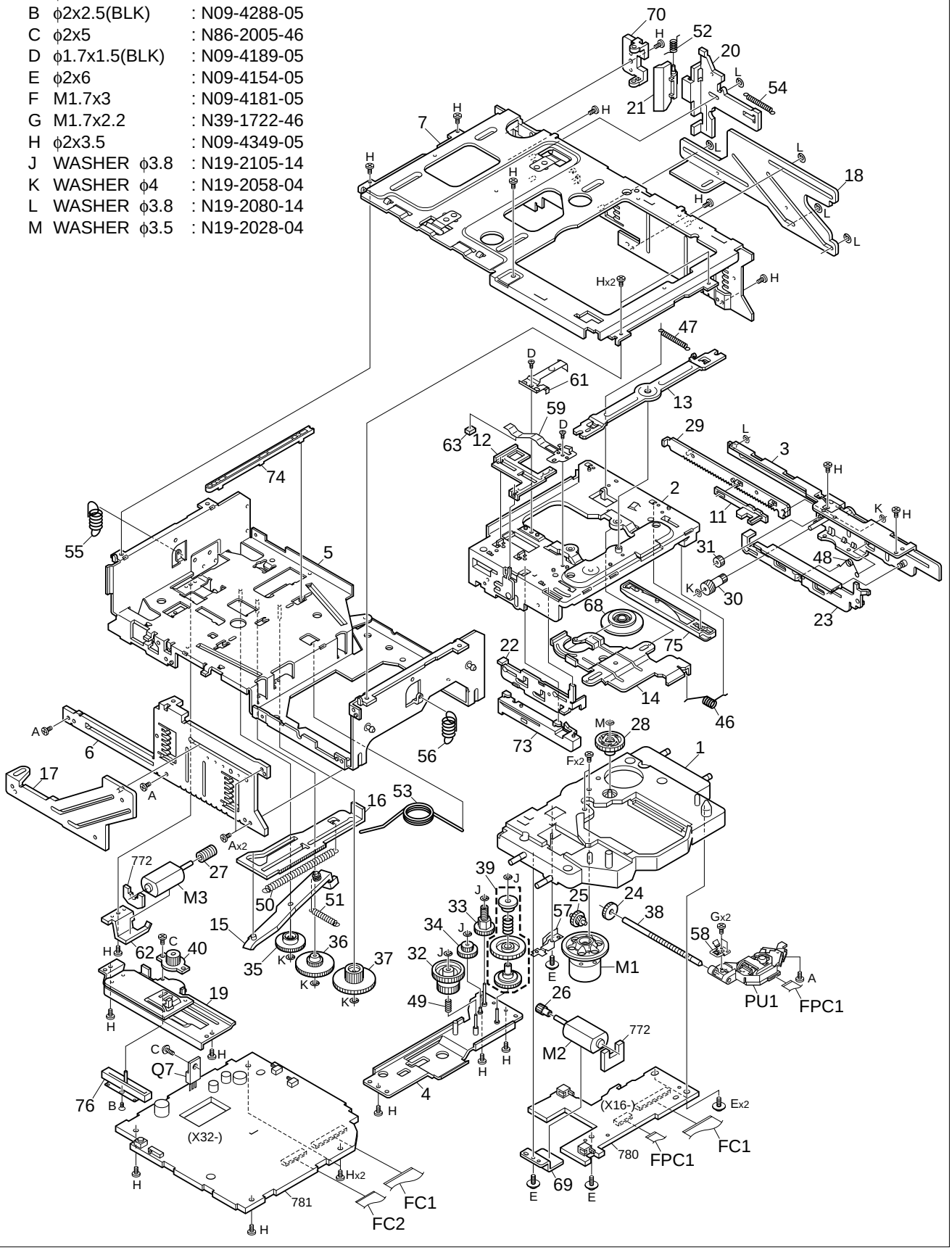
•DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

KDC-CMP59FM

KENWOOD

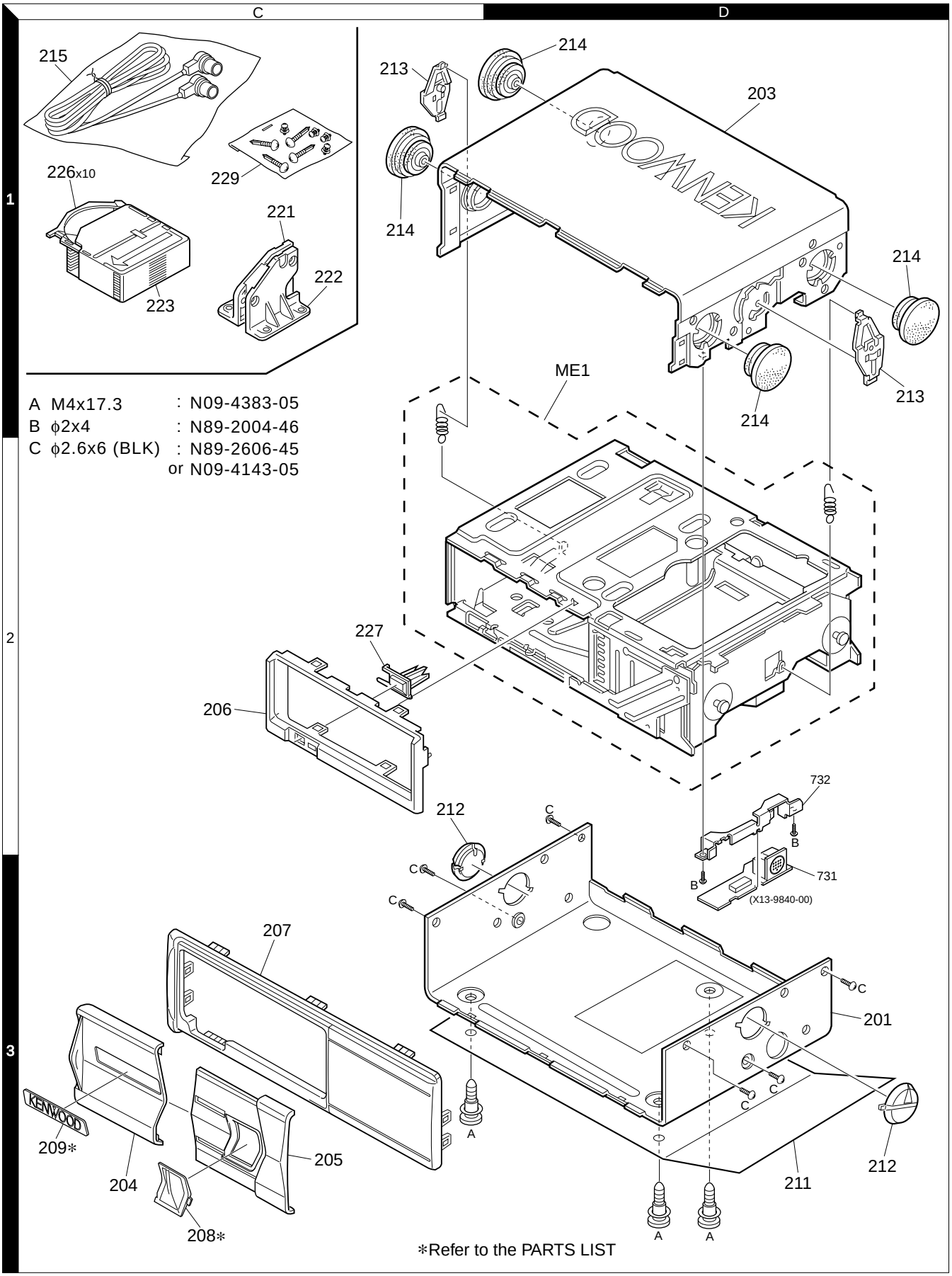
EXPLODED VIEW (MECHANISM)

A	ϕ2x3.5	: N09-4126-05
B	ϕ2x2.5(BLK)	: N09-4288-05
C	ϕ2x5	: N86-2005-46
D	ϕ1.7x1.5(BLK)	: N09-4189-05
E	ϕ2x6	: N09-4154-05
F	M1.7x3	: N09-4181-05
G	M1.7x2.2	: N39-1722-46
H	ϕ2x3.5	: N09-4349-05
J	WASHER ϕ3.8	: N19-2105-14
K	WASHER ϕ4	: N19-2058-04
L	WASHER ϕ3.8	: N19-2080-14
M	WASHER ϕ3.5	: N19-2028-04



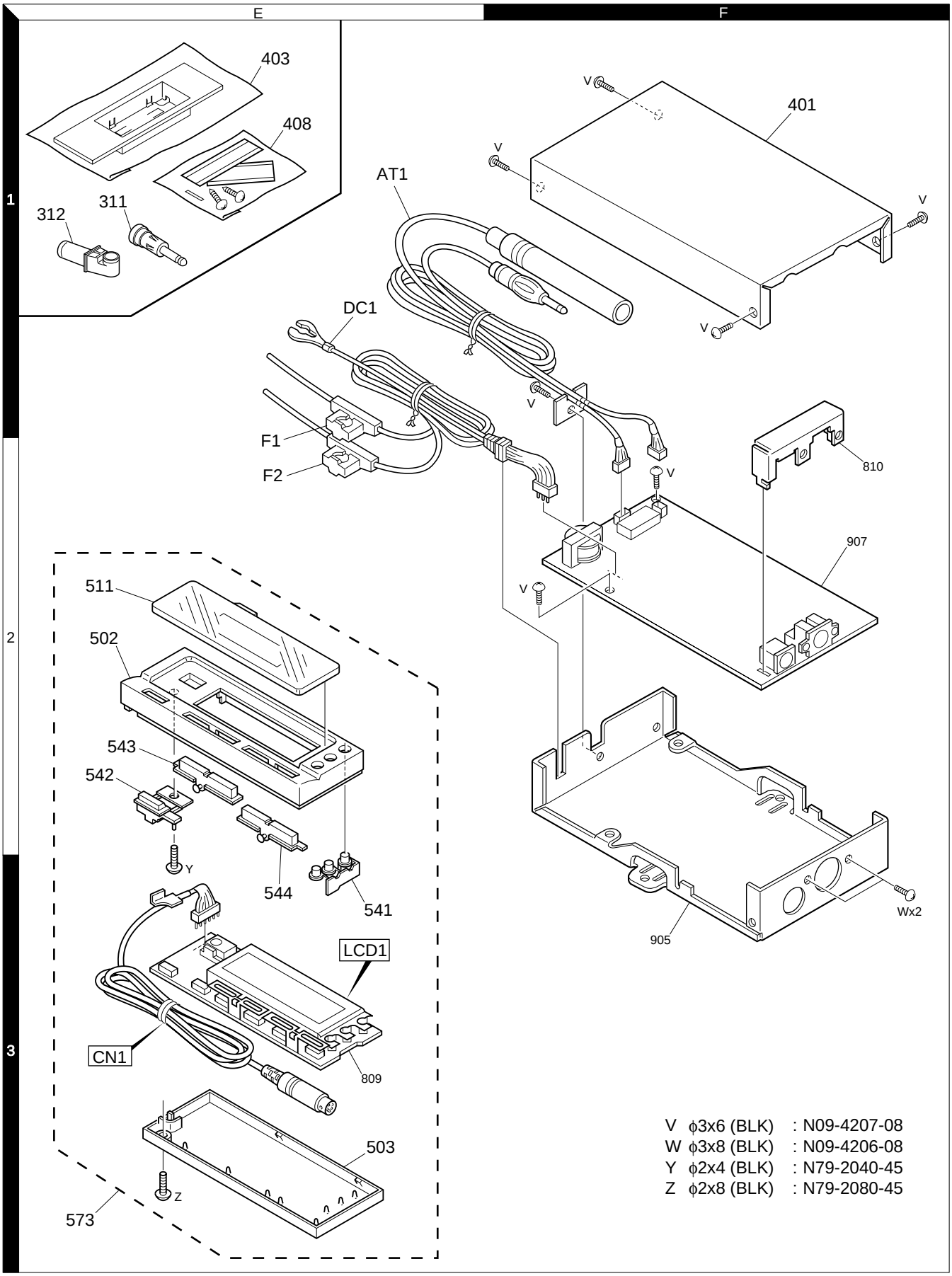
Parts with the exploded numbers larger than 700 are not supplied.

EXPLODED VIEW (UNIT)



Parts with the exploded numbers larger than 700 are not supplied.

EXPLODED VIEW (RF MODULATOR)



V φ3x6 (BLK) : N09-4207-08
W φ3x8 (BLK) : N09-4206-08
Y φ2x4 (BLK) : N79-2040-45
Z φ2x8 (BLK) : N79-2080-45

Parts with the exploded numbers larger than 700 are not supplied.

PARTS LIST

∗New Parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohane **Parts No.** werden nicht geliefert.

The language of an instruction manual.
E : ENG **F** : FRE **P** : POR **H** : HUN **O** : POL
T : CHI **G** : GER **D** : DUT **C** : CRO **Z** : CZE
A : ARA **S** : SPA **I** : I T A **R** : RUS **L** : SLO

Ref. No.	Add	New	Parts No.	Description	Destination
KDC-CX89/CMP59FM/CPS89MP/C719MP					
201	3D		A10-4735-01	CHASSIS	K1E1E2
201	3D		A10-4838-01	CHASSIS	M1
201	3D		A10-4875-01	CHASSIS	M1
201	3D		A10-4967-01	CHASSIS	K
203	1D		A01-2726-11	METALLIC CABINET	K1E1E2
203	1D		A01-2745-11	METALLIC CABINET	M1
203	1D		A01-2767-01	METALLIC CABINET	M1
203	1D		A01-2795-01	METALLIC CABINET	K
204	3C		A21-3535-12	DRESSING PANEL	K
204	3C		A21-3544-12	DRESSING PANEL	M1
204	3C		A21-4047-12	DRESSING PANEL	K1E1E2
205	3C		A21-3538-12	DRESSING PANEL	K
205	3C		A21-3545-12	DRESSING PANEL	M1
205	3C		A21-4048-12	DRESSING PANEL	K1E1E2
206	2C		A22-2837-02	SUB PANEL	K1M1E1
206	2C		A22-2837-02	SUB PANEL	E2
206	2C		A22-2884-02	SUB PANEL	K
207	3C	∗	A64-2719-01	PANEL	K
207	3C	∗	A64-2720-01	PANEL	M1
207	3C	∗	A64-2721-01	PANEL	E1
207	3C	∗	A64-2722-01	PANEL	K1E2
-		∗	A70-2032-05	REMOTE CONTROLLER ASSY	K1E2
208	3C		B10-2997-04	FRONT GLASS	M1
208	3C		B10-3076-04	FRONT GLASS	K
209	3C		B43-1237-04	KENWOOD BADGE	M1
209	3C		B43-1238-04	KENWOOD BADGE	K
211	3D		B58-1275-04	CAUTION CARD	
-			B46-0100-50	WARRANTY CARD	
-			B46-0182-14	ID CARD	E1E2
-			B46-0648-03	USER CARD	K
-			B58-1236-04	CAUTION CARD(CORD)	
-			B58-1273-04	CAUTION CARD(P1,PRA,A6,1)	K1E2
-			B58-1285-04	CAUTION CARD(O-N SW)	
-		∗	B64-2222-00	INSTRUCTIONMANUAL E,F,S,P	KE1
-		∗	B64-2223-00	INSTRUCTIONMANUAL E,F,S,P	K1E2
-		∗	B64-2224-00	INSTRUCTIONMANUAL E.T	M1
-		∗	B64-2225-00	INSTRUCTIONMANUAL G,D,I	E1
-		∗	B64-2226-00	INSTRUCTIONMANUAL F,G,D	E2
212	3D		D10-4515-03	ARM	
213	1C		D10-4516-04	LEVER	
214	1C		D39-0242-05	DAMPER	
215	1C		E30-4291-05	CORD WITH PLUG	
-			H02-0827-03	INNER CARTON CASE	
-			H10-4729-02	POLYSTYRENE FOAMED FIXTURE	
-			H13-1706-04	CARTON BOARD	
-			H25-0337-04	PROTECTION BAG (180X300X0.03)	
-			H25-1111-04	PROTECTION BAG (280X450X0.03)	K1E1E2
-			H25-1115-04	PROTECTION BAG	KM1
-		∗	H54-2488-04	ITEM CARTON CASE	K
-		∗	H54-2489-04	ITEM CARTON CASE	K1E2
-		∗	H54-2490-04	ITEM CARTON CASE	M1
-		∗	H54-2491-04	ITEM CARTON CASE	E1
221	1C		J19-5018-03	BRACKET	
222	1C		J19-5019-03	BRACKET	
223	1C		J19-5074-02	HOLDER ASSY	
226	1C		J99-0612-01	TRAY	
227	2C		K24-3629-04	KNOB	
229	1C		N99-1645-15	SCREW SET	
A	3D		N09-4383-05	STEPPED SCREW	
B	2D		N89-2004-46	BINDING HEAD TAPTITE SCREW	
C	2D		N09-4143-05	TAPTITE SCREW (2.6X6)	M1
C	2D		N89-2606-45	BINDING HEAD TAPTITE SCREW	KK1E1
C	2D		N89-2606-45	BINDING HEAD TAPTITE SCREW	E2
311	1E		T90-0512-05	ANTENNA ADAPTOR	E2
312	1E		T90-0521-05	ANTENNA ADAPTOR	E2
ME1	2D	∗	X92-4550-00	MECHANISM ASSY	
SUB CIRCUIT UNIT (X13-9840-00)					
CN1			E40-9555-05	FLAT CABLE CONNECTOR	
J1			E56-0825-05	CYLINDRICAL RECEPTACLE	
SUB CIRCUIT UNIT (X13-9850-00)					
CN1			E40-9487-05	FLAT CABLE CONNECTOR	
CN2			E40-9536-05	FLAT CABLE CONNECTOR	
CN2			E41-0193-05	FLAT CABLE CONNECTOR	
S1 ,2			S74-0811-05	MICRO SWITCH	
CD PLAYER UNIT (X32-5340-00)					
C1 -4			CK73GB1H152K	CHIP C 1500PF K	
C5 -8			CK73GB1C104K	CHIP C 0.10UF K	
C9			C92-0628-05	CHIP-TAN 10UF 10WV	
C10			CK73GB1H152K	CHIP C 1500PF K	
C11			CC73GCH1H470J	CHIP C 47PF J	
C12			CC73GCH1H680J	CHIP C 68PF J	
C13 -15			CK73GB1C104K	CHIP C 0.10UF K	
C16 ,17			CC73GCH1H020C	CHIP C 2.0PF C	
C18			CK73GB1H222K	CHIP C 2200PF K	
C19			CK73GB1H332K	CHIP C 3300PF K	
C20			CK73GB1H103K	CHIP C 0.010UF K	
C21			CK73GB1H682K	CHIP C 6800PF K	
C24			CK73EB1A475K	CHIP C 4.7UF K	
C26			CK73GB1C104K	CHIP C 0.10UF K	
C27			CK73GB1H102K	CHIP C 1000PF K	
C28 -31			CK73GB1C104K	CHIP C 0.10UF K	
C32			C92-0712-05	CHIP-TAN 22UF 6.3WV	
C33 ,34			CK73GB1C104K	CHIP C 0.10UF K	
C35			CK73EB1A475K	CHIP C 4.7UF K	
C36			C92-1388-05	ELECTRO 470UF 16WV	
C37			C92-1392-05	ELECTRO 100UF 10WV	
C38 ,39			CK73EB1A475K	CHIP C 4.7UF K	
C40			C92-1390-05	ELECTRO 100UF 6.3WV	
C41			CK73GB1C104K	CHIP C 0.10UF K	
C42 ,43			CC73GCH1H680J	CHIP C 68PF J	
C44 ,45			CK73GB1H681K	CHIP C 680PF K	

K: KDC-CX89 **K1**: KDC-CMP59FM **M1**: KDC-CPS89MP
E1: KDC-C719MP **E2**: KDC-CMP59FM

⚠ indicates safety critical components.

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(X32-5340-00)

Ref. No.	Add	New	Parts No.	Description	Destination
C46			CK73GB1C104K	CHIP C 0.10UF K	
C47			CK73GB1H103K	CHIP C 0.010UF K	
C48			CK73GB1C104K	CHIP C 0.10UF K	
C49			CK73EB0J106K	CHIP C 10UF K	
C50 ,51			CK73GB1C104K	CHIP C 0.10UF K	
C52			CK73GB0J105K	CHIP C 1.0UF K	
C53 ,54			CK73GB1C104K	CHIP C 0.10UF K	
C55 ,56			CK73GB1H331K	CHIP C 330PF K	
C57 ,58			CK73GB1C104K	CHIP C 0.10UF K	
C59 ,60			CK73GB1H681K	CHIP C 680PF K	
C61			CK73FB1A225K	CHIP C 2.2UF K	
C62			C92-0712-05	CHIP-TAN 22UF 6.3WV	
C63 ,64			CK73GB1C104K	CHIP C 0.10UF K	
C65			C92-0628-05	CHIP-TAN 10UF 10WV	
C66			C92-1390-05	ELECTRO 100UF 6.3WV	
C67 -69			CK73EB1A475K	CHIP C 4.7UF K	
C70			CK73FB1A225K	CHIP C 2.2UF K	
C71			CK73FB1A105K	CHIP C 1.0UF K	
C72			CK73GB1C104K	CHIP C 0.10UF K	
C73			CK73EB1A475K	CHIP C 4.7UF K	
C74			CK73FB1A225K	CHIP C 2.2UF K	
C75			CC73GCH1H101J	CHIP C 100PF J	
C76 ,77			CE32AT1A100M	CHIP EL 10UF 10WV	
C78			C92-1388-05	ELECTRO 470UF 16WV	
C79			CK73GB1H152K	CHIP C 1500PF K	
C80			CK73GB1H332K	CHIP C 3300PF K	
C81 ,82			CK73GB1C104K	CHIP C 0.10UF K	
CN1			E40-9404-05	FLAT CABLE CONNECTOR	
CN1			E41-0210-05	FLAT CABLE CONNECTOR	
CN2			E40-9338-05	FLAT CABLE CONNECTOR	
CN2			E41-0212-05	FLAT CABLE CONNECTOR	
X1			L78-0860-05	RESONATOR (16.93MHZ)	
X2			L78-0568-05	RESONATOR	
X3			L78-0862-05	RESONATOR (16.00MHZ)	
CP1			R90-0714-05	MULTI-COMP 10K X4	
CP2 -8			R90-1014-05	MULTI-COMP 100 X4	
CP13			R90-0720-05	MULTI-COMP 100K X4	
CP14			R90-1014-05	MULTI-COMP 100 X4	
CP15			R90-0720-05	MULTI-COMP 100K X4	
CP16-19			R90-1014-05	MULTI-COMP 100 X4	
CP20-23			R90-0720-05	MULTI-COMP 100K X4	
CP24,25			R90-0719-05	MULTI-COMP 4.7K X2	
CP26			R90-0737-05	MULTI-COMP 100K X2	
CP28-30			R90-1019-05	MULTI-COMP 100 X2	
CP31			R90-0718-05	MULTI-COMP 4.7K X4	
CP32			R90-0714-05	MULTI-COMP 10K X4	
R1 ,2			RK73GB2A101J	CHIP R 100 J 1/10W	
R3			RK73GB2A4R7J	CHIP R 4.7 J 1/10W	
R4			RK73GB2A103J	CHIP R 10K J 1/10W	
R6			RK73GB2A364J	CHIP R 360K J 1/10W	
R9			RK73GB2A333J	CHIP R 33K J 1/10W	
R10			RK73GB2A103J	CHIP R 10K J 1/10W	
R13			RK73GB2A473J	CHIP R 47K J 1/10W	
R17 ,18			RK73GB2A302J	CHIP R 3.0K J 1/10W	

Ref. No.	Add	New	Parts No.	Description	Destination
R19			RK73GB2A391J	CHIP R 390 J 1/10W	
R20			RK73GB2A102J	CHIP R 1.0K J 1/10W	
R21			RK73GB2A104J	CHIP R 100K J 1/10W	
R22			RK73GB2A103J	CHIP R 10K J 1/10W	
R23			RK73GB2A183J	CHIP R 18K J 1/10W	
R24			RK73GB2A332J	CHIP R 3.3K J 1/10W	
R25			RK73GB2A472J	CHIP R 4.7K J 1/10W	
R26			RK73GB2A104J	CHIP R 100K J 1/10W	
R27			RK73GB2A223J	CHIP R 22K J 1/10W	
R28 -30			RK73GB2A102J	CHIP R 1.0K J 1/10W	
R31			RK73GB2A104J	CHIP R 100K J 1/10W	
R32			RK73GB2A154J	CHIP R 150K J 1/10W	
R36 -39			RK73GB2A104J	CHIP R 100K J 1/10W	
R41			RK73GB2A104J	CHIP R 100K J 1/10W	
R42			RK73GB2A102J	CHIP R 1.0K J 1/10W	
R43			RK73GB2A471J	CHIP R 470 J 1/10W	
R44 -46			RK73GB2A104J	CHIP R 100K J 1/10W	
R47 -49			RK73GB2A101J	CHIP R 100 J 1/10W	
R50			RK73GB2A102J	CHIP R 1.0K J 1/10W	
R53 ,54			RK73FB2B123J	CHIP R 12K J 1/8W	
R55 ,56			RK73FB2B183J	CHIP R 18K J 1/8W	
R57 ,58			RK73FB2B333J	CHIP R 33K J 1/8W	
R59 ,60			RK73FB2B681J	CHIP R 680 J 1/8W	
R61			RK73GB2A272J	CHIP R 2.7K J 1/10W	
R62			RK73GB2A752J	CHIP R 7.5K J 1/10W	
R63			RK73GB2A272J	CHIP R 2.7K J 1/10W	
R64			RK73GB2A752J	CHIP R 7.5K J 1/10W	
R66			RK73GB2A104J	CHIP R 100K J 1/10W	
R67 ,68			RK73GB2A103J	CHIP R 10K J 1/10W	
R69			RK73GB2A101J	CHIP R 100 J 1/10W	
R70			RK73GB2A104J	CHIP R 100K J 1/10W	
R73			RK73GB2A103J	CHIP R 10K J 1/10W	
R74			RK73GB2A472J	CHIP R 4.7K J 1/10W	
R75			RK73GB2A101J	CHIP R 100 J 1/10W	
R78			RK73GB2A102J	CHIP R 1.0K J 1/10W	
R81			RK73GB2A103J	CHIP R 10K J 1/10W	
R82			RK73GB2A101J	CHIP R 100 J 1/10W	
R83			RK73GB2A133J	CHIP R 13K J 1/10W	
R84 ,85			RK73GB2A472J	CHIP R 4.7K J 1/10W	
R86			RK73GB2A133J	CHIP R 13K J 1/10W	
R87			RK73GB2A303J	CHIP R 30K J 1/10W	
R88			RK73GB2A203J	CHIP R 20K J 1/10W	
R89			RK73GB2A103J	CHIP R 10K J 1/10W	
R90			RK73GB2A472J	CHIP R 4.7K J 1/10W	
R91			RK73GB2A303J	CHIP R 30K J 1/10W	
R92			RK73GB2A133J	CHIP R 13K J 1/10W	
R93 ,94			RK73GB2A124J	CHIP R 120K J 1/10W	
R95 ,96			RK73GB2A102J	CHIP R 1.0K J 1/10W	
R97 ,98			RK73GB2A472J	CHIP R 4.7K J 1/10W	
R101,102			RK73GB2A104J	CHIP R 100K J 1/10W	
R103			RK73GB2A103J	CHIP R 10K J 1/10W	
R104			RK73GB2A102J	CHIP R 1.0K J 1/10W	
R105,106			RK73GB2A104J	CHIP R 100K J 1/10W	
R107			RK73GB2A102J	CHIP R 1.0K J 1/10W	
R108,109			RK73FB2B101J	CHIP R 100 J 1/8W	

K: KDC-CX89 **K1**: KDC-CMP59FM **M1**: KDC-CPS89MP
E1: KDC-C719MP **E2**: KDC-CMP59FM

⚠ indicates safety critical components.

PARTS LIST

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(X32-5340-00)

Ref. No.	Add	New	Parts No.	Description	Destination
R115			RK73GB2A223J	CHIP R 22K J 1/10W	
R116			RK73GB2A103J	CHIP R 10K J 1/10W	
R117,118			RK73GB2A101J	CHIP R 100 J 1/10W	
R119			RK73GB2A102J	CHIP R 1.0K J 1/10W	
R120			RK73GB2A223J	CHIP R 22K J 1/10W	
R121			RK73GB2A472J	CHIP R 4.7K J 1/10W	
R122			RK73GB2A103J	CHIP R 10K J 1/10W	
R124,125			RK73FB2B223J	CHIP R 22K J 1/8W	
R126			RK73GB2A102J	CHIP R 1.0K J 1/10W	
R127			RK73GB2A103J	CHIP R 10K J 1/10W	
R128			RK73GB2A104J	CHIP R 100K J 1/10W	
R129			RK73GB2A103J	CHIP R 10K J 1/10W	
R130			RK73GB2A102J	CHIP R 1.0K J 1/10W	
R131-133			RK73GB2A104J	CHIP R 100K J 1/10W	
W1 -6			R92-1252-05	CHIP R 0 OHM J 1/16W	
S1			S68-0823-05	PUSH SWITCH	
S2			S70-0838-05	TACT SWITCH	
S3			S68-0823-05	PUSH SWITCH	
S4			S62-0863-05	SLIDE SWITCH	
D1			DAP202U	DIODE	
D1			MA142WA	DIODE	
D2			MA3056-M	ZENER DIODE	
D3			DA204U	DIODE	
D4			MA8075-M	ZENER DIODE	
D5			MA8091-M	ZENER DIODE	
D6			1SR154-400	DIODE	
D7 ,8			MA8056-M	ZENER DIODE	
D9			MA3056-M	ZENER DIODE	
D10			DAP202U	DIODE	
D10			MA142WA	DIODE	
D11 ,12			DAN202U	DIODE	
D11 ,12			MA142WK	DIODE	
D13			MA3056-M	ZENER DIODE	
D14			DAP202U	DIODE	
D14			MA142WA	DIODE	
D16			DA204U	DIODE	
IC1			UPD63760GJ	MOS-IC	
IC2			UPD784214GC144	MI-COM IC	
IC3			LA6576	ANALOGUE IC	
IC4			NJM4580M1	ANALOGUE IC	
IC5			703033AYGC-J01	MI-COM IC	
IC6			IS41LV16257	MEMORY IC	
IC6			MSM51V4265EP70	MOS-IC	
IC7			BR24C01AF-W	MEMORY IC	
IC7			M24C01-WMN6T	MEMORY IC	
IC8			TC74HCT7007AF	MOS-IC	
IC9			TAR5S33	ANALOGUE IC	
IC10			S-80830ANNP	MOS-IC	
IC11			L88M33T	ANALOGUE IC	
IC12			TC7SH32FU	MOS-IC	
Q1			MCH6101	TRANSISTOR	
Q2			DTC124EUA	DIGITAL TRANSISTOR	
Q2			UN5212	DIGITAL TRANSISTOR	
Q3			DTA143EUA	DIGITAL TRANSISTOR	

Ref. No.	Add	New	Parts No.	Description	Destination
Q4 ,5			DTC124EUA	DIGITAL TRANSISTOR	
Q4 ,5			UN5212	DIGITAL TRANSISTOR	
Q6			2SC4081	TRANSISTOR	
Q6			2SD1819A	TRANSISTOR	
Q8			2SC4081	TRANSISTOR	
Q8			2SD1819A	TRANSISTOR	
Q10			2SC4081	TRANSISTOR	
Q10			2SD1819A	TRANSISTOR	
Q11			2SB1202	TRANSISTOR	
Q12 -14			DTC124EUA	DIGITAL TRANSISTOR	
Q12 -14			UN5212	DIGITAL TRANSISTOR	
Q15			DTA143EUA	DIGITAL TRANSISTOR	
Q16 ,17			DTA124EUA	DIGITAL TRANSISTOR	
Q16 ,17			UN5112	DIGITAL TRANSISTOR	
Q18 ,19			DTC343TK	DIGITAL TRANSISTOR	
Q20			2SB1295	TRANSISTOR	
Q21			DTA143EUA	DIGITAL TRANSISTOR	
Q22			DTC124EUA	DIGITAL TRANSISTOR	
Q22			UN5212	DIGITAL TRANSISTOR	
Q23			2SB1295	TRANSISTOR	
Q24			DTC124EUA	DIGITAL TRANSISTOR	
Q24			UN5212	DIGITAL TRANSISTOR	
TH1			NTH5G20B333K07	THERMISTOR	
MECHANISM ASSY (X92-4550-00)					
1	2B		A10-4745-13	CHASSIS ASSY	
2	2B		A10-4748-02	CHASSIS CALKING ASSY	
3	2B		A10-4751-03	CHASSIS CALKING ASSY	
4	3A		A10-4754-04	CHASSIS CALKING ASSY	
5	2A		A10-4757-02	CHASSIS CALKING ASSY	
6	2A		A10-4759-02	CHASSIS	
7	1A		A10-4760-02	CHASSIS CALKING ASSY	
11	2B		D10-4546-03	ARM	
12	2A		D10-4527-03	SLIDER	
13	2B		D10-4528-03	ARM	
14	2B		D10-4529-03	LEVER	
15	3A		D10-4531-04	LEVER ASSY	
16	2A		D10-4533-03	LEVER	
17	2A		D10-4534-04	SLIDER ASSY	
18	1B		D10-4536-13	SLIDER	
19	3A		D10-4537-04	SLIDER ASSY	
20	1B		D10-4540-13	ARM	
21	1B		D10-4547-03	LEVER	
22	2B		D12-0630-02	CAM	
23	2B		D12-0631-02	CAM	
24	3B		D13-2185-04	GEAR	
25	3B		D13-2186-04	GEAR	
26	3B		D13-2187-04	GEAR	
27	3A		D13-2188-04	WORM	
28	2B		D13-2092-04	GEAR	
29	2B		D13-2093-04	GEAR ASSY	
30	2B		D13-2095-04	GEAR	
31	2B		D13-2096-04	GEAR	
32	3A		D13-2099-04	GEAR	
33	3A		D13-2100-04	GEAR	

K: KDC-CX89 **K1**: KDC-CMP59FM **M1**: KDC-CPS89MP
E1: KDC-C719MP **E2**: KDC-CMP59FM

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PARTS LIST

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(X92-4550-00)

Ref. No.	Add	New	Parts No.	Description	Destination
34	3A		D13-2101-04	GEAR	
35	3A		D13-2102-04	GEAR	
36	3A		D13-2103-04	GEAR	
37	3A		D13-2104-04	GEAR	
38	3B		D19-0636-04	LEAD SCREW	
39	3B		D19-0637-04	CLUTCH ASSY	
40	3A		D39-0225-05	DAMPER	
FC1	3A		E39-0172-15	FLAT CABLE	
FC2	3A		E39-0173-15	FLAT CABLE	
46	2B		G01-3036-04	TORSION COIL SPRING	
47	1B		G01-3037-04	EXTENSION SPRING	
48	2B		G01-3038-04	TORSION COIL SPRING	
49	3A		G01-3039-04	COMPRESSION SPRING	
50	3A		G01-3040-04	EXTENSION SPRING	
51	3A		G01-3041-04	EXTENSION SPRING	
52	1B		G01-3042-04	TORSION COIL SPRING	
53	2A		G01-3043-04	TORSION COIL SPRING	
54	1B		G01-3044-04	EXTENSION SPRING	
55	2A		G01-3045-04	EXTENSION SPRING	
56	2A		G01-3046-04	EXTENSION SPRING	
57	3B		G02-1374-04	FLAT SPRING	
58	3B		G02-1375-03	FLAT SPRING	
59	2B		G02-1376-03	FLAT SPRING	
61	1B		G02-1378-14	FLAT SPRING	
62	3A		G02-1380-04	FLAT SPRING	
63	2A		G10-1045-14	FELT	
68	2B		J11-0637-03	CLAMPER	
69	3B		J21-9592-04	MOUNTING HARDWARE	
70	1B		J21-9595-03	MOUNTING HARDWARE	
73	2B		J90-0759-03	GUIDE	
74	2A		J90-0760-03	RAIL	
75	2B		J90-0777-23	GUIDE	
FPC1	3B		J84-0141-05	FLEXIBLE PRINTED WIRING BOARD	
A	2A		N09-4126-05	MACHINE SCREW (2X3.5,C,BLK)	
B	3A		N09-4288-05	TAPTITE SCREW (2X2.5,S)	
C	3A		N86-2005-46	BINDING HEAD TAPTITE SCREW	
D	2B		N09-4189-05	TAPTITE SCREW (1.7X1.5,S)	
E	3B		N09-4154-05	TAPTITE SCREW	
F	2B		N09-4181-05	MACHINE SCREW (M1.7X3,LOCK)	
G	3B		N39-1722-46	PAN HEAD MACHIN SCREW	
H	1A		N09-4349-05	TAPTITE SCREW	
J	3A		N19-2105-14	FLAT WASHER	
K	3A		N19-2058-04	FLAT WASHER	
L	1B		N19-2080-14	FLAT WASHER	
M	2B		N19-2028-04	FLAT WASHER	
76	3A		R33-0207-05	SLIDE TYPE VARIABLE RESISTOR	
M1	3B		T42-0797-05	DC MOTOR ASSY	
M2,3	3A		T42-1063-05	DC MOTOR	
PU1	3B		T25-0216-05	OPTICAL PICKUP HEAD	
Q7,9	3A		2SB1548(P)	TRANSISTOR	

Ref. No.	Add	New	Parts No.	Description			Destination
RF MODULATOR UNIT (W02-321X-XX)							
401	1F		A01-2695-08	CASE			E2
401	1F	∗	A01-2723-08	CASE			K1
403	1E		B07-2138-08	HOLDER ASSY			
408	1E		W01-0763-08	MAGICTAPE ASSY			
C1			C90-2583-05	ELECTRO	1000UF	16WV	
C2			CK73FB1H223K	CHIP C	0.022UF	K	
C3			CE04NW1H4R7M	ELECTRO	4.7UF	50WV	
C6			CE04NW1C100M	ELECTRO	10UF	16WV	
C7			CE04NW1H010M	ELECTRO	1UF	50WV	
C8			CK73FB1H102K	CHIP C	1000PF	K	
C9 ,10			CK73FB1H103K	CHIP C	0.010UF	K	
C11 ,12			CC73FCH1H220J	CHIP C	22PF	J	
C13 -17			CK73FB1H102K	CHIP C	1000PF	K	
C19			CE04DW1A101M	ELECTRO	100UF	10WV	
C20			CE04DW1E221M	ELECTRO	220UF	25WV	
C24			CE04DW1C471M	ELECTRO	470UF	16WV	
C30			CE04DW1A102M	ELECTRO	1000UF	10WV	
C31			CE04DW1A221M	ELECTRO	220UF	10WV	
C32			CE04DW1A101M	ELECTRO	100UF	10WV	
C33			C90-2583-05	ELECTRO	1000UF	16WV	
C34			CE04NW1H010M	ELECTRO	1UF	50WV	
C35			CK73FB1H103K	CHIP C	0.01UF	K	
C36			C90-2689-05	ELECTRO	3300UF	16WV	
C103			CK73FB1H103K	CHIP C	0.01UF	K	
C104			CE04NW1C100M	ELECTRO	10UF	16WV	
C105			CE04DW1A221M	ELECTRO	220UF	10WV	
C106			CE04NW1C100M	ELECTRO	10UF	16WV	
C107			CC73FCH1H271J	CHIP C	270PF	J	
C108			CK73FB1H102K	CHIP C	1000PF	K	
C109,110			CK73FF1H104Z	CHIP C	0.10UF	Z	
C111			CE04NW1H010M	ELECTRO	1UF	50WV	
C112			CK73FB1H332K	CHIP C	3300PF	K	
C113			CC73FCH1H181J	CHIP C	180PF	J	
C114			CK73FB1H153KTA	CHIP C	0.015UF	K	
C115			CK73FB1H682K	CHIP C	6800PF	K	
C203			CK73FB1H103K	CHIP C	0.01UF	K	
C204			CE04NW1C100M	ELECTRO	10UF	16WV	
C205			CE04DW1A221M	ELECTRO	220UF	10WV	
C206			CE04NW1C100M	ELECTRO	10UF	16WV	
C207			CC73FCH1H271J	CHIP C	270PF	J	
C208			CK73FB1H102K	CHIP C	1000PF	K	
C209,210			CK73FF1H104Z	CHIP C	0.10UF	Z	
C211			CE04NW1H010M	ELECTRO	1UF	50WV	
C212			CK73FB1H332K	CHIP C	3300PF	K	
C213			CC73FCH1H181J	CHIP C	180PF	J	
C214			CK73FB1H153KTA	CHIP C	0.015UF	K	
C215			CK73FB1H682K	ELECTRO	6800PF	50WV	
C301			CE04NW1C100M	ELECTRO	10UF	16WV	
C302			CK73FB1H103K	CHIP C	0.010UF	K	
C304			CC73FCH1H100D	CHIP C	10PF	D	
C305			CK73FB1H103K	CHIP C	0.010UF	K	
C306			CC73FCH1H221J	CHIP C	220PF	J	
C308			CC73FCH1H221J	CHIP C	0.033UF	K	

K: KDC-CX89 **K1**: KDC-CMP59FM **M1**: KDC-CPS89MP
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(W02-321X-XX)

Ref. No.	Add	New	Parts No.	Description			Destination
C310			CC73FCH1H330J	CHIP C	33PF	J	
C312			CK73FB1H103K	CHIP C	0.010UF	K	
C314			CE04NW1HR22M	ELECTRO	0.22UF	50WV	
C315			CE04DW1A101M	ELECTRO	100UF	10WV	
C316			CK73FB1H103K	CHIP C	0.010UF	K	
C317			CE04NW1H2R2M	ELECTRO	2.2UF	50WV	
C318,319			CK73FB1H103K	CHIP C	0.010UF	K	
C320			CC73FCH1H181J	CHIP C	180PF	J	
C321			CE04NW1H010M	ELECTRO	1UF	50WV	
C322			CC73FUJ1H221J	CHIP C	220PF	J	
C323			CC73FUJ1H680J	CHIP C	68PF	J	
C324			CC73FUJ1H150J	CHIP C	15PF	J	
C325			CK73FB1H103K	CHIP C	0.010UF	K	
C326			CE04DW1E470M	ELECTRO	47UF	25WV	
C327			CC73FUJ1H150J	CHIP C	15PF	J	
C328			CC73FCH1H020C	CHIP C	2.0PF	C	
C329			CC73FCH1H150J	CHIP C	15PF	J	
C330			CK73FB1H103K	CHIP C	0.010UF	K	
C331			CC73FCH1H010C	CHIP C	1.0PF	C	
C332			CC73FCH1H050C	CHIP C	5.0PF	C	
C333,334			CC73FCH1H330J	CHIP C	33PF	J	
C335			CE04NW1H4R7M	ELECTRO	4.7UF	50WV	
C336			CK73FB1H222K	CHIP C	2200PF	K	
C338			CC73FCH1H050C	CHIP C	5PF	C	
CN101			E56-0811-05	CONNECTOR (8P)			
CN102			E56-0805-15	CONNECTOR (13P)			
CN104,105			E40-3237-05	PIN ASSY			
VC301			C05-0513-08	TRIMMER 20P			
AT1	1E		E30-4310-08	ANTENNA CORDASSY			
DC1	1E		E30-4733-08	DC CORD			
F1 ,2	2E		F06-3026-05	FUSE (3A)			
L1			L33-0934-08	CHOKING COIL			
L301			L33-1043-08	SMALL FIXED INDUCTOR (0.22uH)			
L302,303			L33-0976-08	SMALL FIXED INDUCTOR (2.2uH)			
L304			L33-1043-08	SMALL FIXED INDUCTOR (0.22uH)			
L305			L33-1042-08	SMALL FIXED INDUCTOR (0.12uH)			
X301			L77-2716-08	CRYSTAL RESONATOR (38KHz)			
X302			L77-2062-08	CRYSTAL RESONATOR (4.5MHz)			
V	1F		N09-4207-08	SCREW (3X6,Ni-B)			
W	3F		N09-4206-08	SCREW (for CN102 x2)(3X8)			
R1			RD14BB2C242J	RD	2.4K	J 1/6W	
R2			RD14BB2C222J	RD	2.2K	J 1/6W	
R6			RK73FB2A223J	CHIP R	22K	J 1/10W	
R7			R92-2148-08	CHIP R	22	J 2W	
R8			RD14BB2C223J	RD	22K	J 1/6W	
R9			RD14BB2C222J	RD	2.2K	J 1/6W	
R11			RD14BB2C102J	RD	1.0K	J 1/6W	
R12			RD14BB2C103J	RD	10K	J 1/6W	
R13			RD14BB2C104J	RD	100K	J 1/6W	
R14			RD14BB2C332J	RD	3.3K	J 1/6W	
R15			RD14BB2C104J	RD	100K	J 1/6W	
R16			RD14BB2C332J	RD	3.3K	J 1/6W	
R17			RD14BB2C102J	RD	1K	J 1/6W	
R18			RK73FB2A104J	CHIP R	100K	J 1/10W	
R19			RD14BB2C332J	RD	3.3K	J 1/6W	
R20			RD14BB2C102J	RD	1K	J 1/6W	
R21			RD14BB2C472J	RD	4.7K	J 1/6W	
R22 ,23			RD14BB2C102J	RD	1.0K	J 1/6W	
R24			RD14BB2C472J	RD	4.7K	J 1/6W	
R25 ,26			RD14BB2C102J	RD	1.0K	J 1/6W	
R27 ,28			RK73FB2A103J	CHIP R	10K	J 1/10W	
R31			RK73FB2A473J	CHIP R	47K	J 1/10W	
R33			RK73FB2A473J	CHIP R	47K	J 1/10W	
R34			RK73FB2A182J	CHIP R	1.8K	J 1/10W	
R35			RK73FB2A151J	CHIP R	150	J 1/10W	
R102			RK73FB2A152J	CHIP R	1.5K	J 1/10W	
R103			RK73FB2A682J	CHIP R	6.8K	J 1/10W	
R104			RK73FB2A103J	CHIP R	10K	J 1/10W	
R105-108			R92-0363-05	CHIP R	10K	F 1/10W	
R109			RK73FB2A182J	CHIP R	1.8K	J 1/10W	
R110			RK73FB2A391J	CHIP R	390	J 1/10W	
R111			RK73FB2A102J	CHIP R	1.0K	J 1/10W	
R112			RK73FB2A753J	CHIP R	75K	J 1/10W	
R114-116			RK73FB2A682J	CHIP R	6.8K	J 1/10W	
R202			RK73FB2A152J	CHIP R	1.5K	J 1/10W	
R203			RK73FB2A682J	CHIP R	6.8K	J 1/10W	
R204			RK73FB2A103J	CHIP R	10K	J 1/10W	
R205-208			R92-0363-05	CHIP R	10K	D 1/10W	
R209			RK73FB2A182J	CHIP R	1.0K	J 1/10W	
R210			RK73FB2A391J	CHIP R	390	J 1/10W	
R212			RK73FB2A753J	CHIP R	75K	J 1/10W	
R214-216			RK73FB2A682J	CHIP R	6.8K	J 1/10W	
R301			RK73FB2A154J	CHIP R	150K	J 1/10W	
R302			RK73FB2A123J	CHIP R	12K	J 1/10W	
R306			RK73FB2A103J	CHIP R	10K	J 1/10W	
R307			RK73FB2A472J	CHIP R	4.7K	J 1/10W	
R308			RK73FB2A154J	CHIP R	150K	J 1/10W	
R314			RK73FB2A473J	CHIP R	47K	J 1/10W	
R316			RK73FB2A122J	CHIP R	1.2K	J 1/10W	
R317			RK73FB2A242J	CHIP R	2.4K	J 1/10W	
R318			RK73FB2A332J	CHIP R	2.7K	J 1/10W	
R319			RD14BB2C122J	RD	1.2K	J 1/6W	
R320			RK73FB2A103J	CHIP R	10K	J 1/10W	
R322			RD14BB2C472J	RD	4.7K	J 1/6W	
R323			RK73FB2A471J	CHIP R	470	J 1/10W	
R325,326			RK73FB2A223J	CHIP R	22K	J 1/10W	
R327			RK73FB2A473J	CHIP R	47K	J 1/10W	
R328			RK73FB2A271J	CHIP R	270	J 1/10W	
R329			RK73FB2A470J	CHIP R	47	J 1/10W	
R330			RK73FB2A331J	CHIP R	330	J 1/10W	
R331			RK73FB2A473J	CHIP R	47K	J 1/10W	
R332			RK73FB2A101J	CHIP R	100	J 1/10W	
R333			RK73FB2A470J	CHIP R	47	J 1/10W	
R334			RK73FB2A472J	CHIP R	4.7K	J 1/10W	
R335			RK73FB2A8R2J	CHIP R	8.2	J 1/10W	
R337,338			RK73FB2A472J	CHIP R	4.7K	J 1/10W	
R339,340			RK73FB2A391J	CHIP R	390	J 1/10W	
R343			RK73FB2A101J	CHIP R	100	J 1/10W	

K: KDC-CX89 **K1**: KDC-CMP59FM **M1**: KDC-CPS89MP
E1: KDC-C719MP **E2**: KDC-CMP59FM

⚠ indicates safety critical components.

PARTS LIST

∗New Parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohane **Parts No.** werden nicht geliefert.

(W02-321X-XX)

Ref. No.	Add	New	Parts No.	Description	Destination
R346			RK73FB2A472J	CHIP R 4.7K J 1/10W	
R348			RK73FB2A224J	CHIP R 220K J 1/10W	
VR301			R32-0208-08	TRIMING POT33K(B)	
VR303			R32-0207-08	TRIMING POT10K(B)	
RL1			S76-0802-08	MAGNET RELAY	
D1			DSK10C-ET1	DIODE	
D2			DSK10C-BT	DIODE	
D5			DSK10C-ET1	DIODE	
D8 -9			1SS131	DIODE	
D12 ,13			1SS131	DIODE	
D14			DSK10C-ET1	DIODE	
D15			DSK10C-BT	DIODE	
D16			1SS131	DIODE	
D101			DA204K	DIODE	
D201			DA204K	DIODE	
D302			DA204K	DIODE	
IC1			UPC7805AHF	IC(VOLTAGE REGULATOR/+5V)	
IC2			LC72329-9274	IC (MICRO COMPUTER)	
IC4			NJM78L05UA	IC(VOLTAGE REGULATOR/+5V)	
IC101			NJM2060M	IC(OP AMP X4)	
IC102			NJM4565MD	IC(OP AMP X2)	
IC301			BA1405F	IC (MPX)	
IC302			NJM4565MD	IC(OP AMP X2)	
Q1			DTC124EK	DIGITAL TRANSISTOR	
Q2			2SA1782(T,U)	TRANSISTOR	
Q3			DTC124EK	DIGITAL TRANSISTOR	
Q4 ,5			DTC143TK	DIGITAL TRANSISTOR	
Q6			DTA124EK	DIGITAL TRANSISTOR	
Q8			DTC143TK	DIGITAL TRANSISTOR	
Q9			2SC4640T/U	TRANSISTOR	
Q101			2SK2158	FET	
VD301			HVU306A-3	VARIABLE DIODE	
ZD1 -7			MTZ6.2J(B)	ZENER DIODE	
Q201			2SK2158	FET	
Q303			2SA1162(GR)	TRANSISTOR	
Q304,305			2SK2158	FET	
Q306			2SK508L	FET	
Q307			2SC2714(Y)	TRANSISTOR	
Q308-310			2SK2158	FET	

DISPLAY UNIT

Ref. No.	Add	New	Parts No.	Description	Destination
502	2E		A02-1460-08	FRONT CASE	
503	3E		A02-1446-08	REAR CASE	
511	2E		B10-3055-08	FRONT GLASSASSY	
LCD1	3E		B38-0643-08	LCD	
LED1-18			B30-1459-08	LED	
C1			C92-0047-05	CHIP-ELE 47UF 6.3WV	
C2			CK73GB1H681K	CHIP C 680PF K	
C3			C92-0037-05	CHIP-ELE 10UF 16WV	
C4 ,5			CK73FB1H223KTA	CHIP C 0.022UF K	
CN1	3E		E30-4309-08	DIN CORD ASSY (8P)	
541	3E		K25-0713-08	KNOB (REP, RDM, PLAY/PAUSE)	
542	2E		K29-5576-08	KNOB ASSY (PWR, RESET)	
543	2E		K29-5585-08	KNOB (TRACK)	
544	3E		K29-5586-08	KNOB (DISC)	
Y	3E		N79-2040-45	SCREW (POWER-KEY x1)	
Z	3E		N79-2080-45	SCREW (REAR CASE x1)	
R1 -3			RK73GB1J222J	CHIP R 2.2K J 1/16W	
R4			RK73GB1J101J	CHIP R 100 J 1/16W	
R5			RK73GB1J222J	CHIP R 2.2K J 1/16W	
R6			RK73GB1J513J	CHIP R 51K J 1/16W	
R7 -15			RK73FB2A470J	CHIP R 47 J 1/10W	
R16 ,17			RK73GB1J102J	CHIP R 1.0K J 1/16W	
SW1 -9			S70-0828-08	TACT SWITCH	
573	3E		T95-0247-08	DISPLAY UNIT ASSY	
D1 -5			DA204K	DIODE	
IC1			LC75852W	IC (LCD DRIVER)	
IC2			PNA4602M	IC (REMOTE SENSOR)	
Q1			DTC144EK	DIGITAL TRANSISTOR	
Q2			DTB123YK	DIGITAL TRANSISTOR	
Q3			DTA144EK	DIGITAL TRANSISTOR	
Q4			DTC144EK	DIGITAL TRANSISTOR	
Q5			DTA144EK	DIGITAL TRANSISTOR	

K: KDC-CX89 **K1**: KDC-CMP59FM **M1**: KDC-CPS89MP
E1: KDC-C719MP **E2**: KDC-CMP59FM

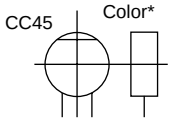
⚠ indicates safety critical components.

PARTS LIST

CAPACITORS

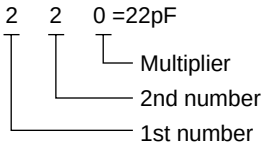
CC	45	TH	1H	220	J
1	2	3	4	5	6

1 = Type ...ceramic, electrolytic, etc.
2 = Shape ...round, square, etc.
3 = Temp. coefficient
4 = Voltage rating
5 = Value
6 = Tolerance



•Capacitor value

010= 1pF
100= 10pF
101= 100pF
102= 1000pF=0.001µF
103= 0.01µF



• Temperature coefficient

1st Word	C	L	P	R	S	T	U
Color*	Black	Red	Orange	Yellow	Green	Blue	Violet
ppm/°C	0	-80	-150	-220	-330	-470	-750

2nd Word	G	H	J	K	L
ppm/°C	±30	±60	±120	±250	±500

Example : CC45TH = -470 ± 60ppm/°C

• Tolerance (More than 10pF)

Code	C	D	G	J	K	M	X	Z	P	No code
(%)	±0.25	±0.5	±2	±5	±10	±20	+40	+80	+100	More than 10µF -10~+50
							-40	-20	-0	Less than 4.7µF -10~+75

(Less than 10pF)

Code	B	C	D	F	G
(pF)	±0.1	±0.25	±0.5	±1	±2

• Voltage rating

2nd word / 1st word	A	B	C	D	E	F	G	H	J	K	V
0	1.0	1.25	1.6	2.0	2.5	3.15	4.0	5.0	6.3	8.0	-
1	10	12.5	16	20	25	31.5	40	50	63	80	35
2	100	125	160	200	250	315	400	500	630	800	-
3	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	-

• Chip capacitors

(EX) C C 7 3 F S L 1 H 0 0 0 J
1 2 3 4 5 6 7
(Chip)(CH,RH,UJ,SL)

(EX) C K 7 3 F F 1 H 0 0 0 Z
1 2 3 4 5 6 7
(Chip)(B,F)

Refer to the table above.
1 = Type
2 = Shape
3 = Dimension
4 = Temp. coefficient
5 = Voltage rating
6 = Value
7 = Tolerance

Dimension (Chip capacitors)

Dimension code	L	W	T
Empty	5.6 ± 0.5	5.0 ± 0.5	Less than 2.0
A	4.5 ± 0.5	3.2 ± 0.4	Less than 2.0
B	4.5 ± 0.5	2.0 ± 0.3	Less than 2.0
C	4.5 ± 0.5	1.25 ± 0.2	Less than 1.25
D	3.2 ± 0.4	2.5 ± 0.3	Less than 1.5
E	3.0 ± 0.2	1.6 ± 0.2	Less than 1.25
F	2.0 ± 0.3	1.25 ± 0.2	Less than 1.25
G	1.6 ± 0.2	0.8 ± 0.2	Less than 1.0
H	1.0 ± 0.05	0.5 ± 0.05	0.5 ± 0.05

RESISTORS

• Chip resistor (Carbon)

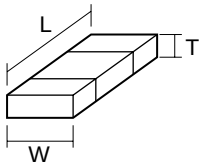
(EX) R K 7 3 E B 2 B 0 0 0 J
1 2 3 4 5 6 7
(Chip)(B,F)

• Carbon resistor (Normal type)

(EX) R D 1 4 B B 2 C 0 0 0 J
1 2 3 4 5 6 7

1 = Type
2 = Shape
3 = Dimension
4 = Temp. coefficient
5 = Rating wattage
6 = Value
7 = Tolerance

Dimension



Dimension (Chip resistor)

Dimension code	L	W	T
E	3.2 ± 0.2	1.6 ± 0.2	1.0
F	2.0 ± 0.3	1.25 ± 0.2	1.0
G	1.6 ± 0.2	0.8 ± 0.2	0.5 ± 0.1
H	1.0 ± 0.05	0.5 ± 0.05	0.35 ± 0.05

Rating wattage

Code	Wattage	Code	Wattage	Code	Wattage
1J	1/16W	2C	1/16W	3A	1W
2A	1/10W	2E	1/4W	3D	2W
2B	1/8W	2H	1/2W		

KDC-CX89/CMP59FM/C719MP/CPS89MP

SPECIFICATIONS

KDC-CX89,C719MP,CPS89MP

Disc section

Laser Diode ..... GaAIAs (λ =780nm)
Digital Filter (D/A) ..... 8 Times Over sampling
D/A Converter 1Bit
Spindle Speed ..... 1000rpm~400rpm (CLV•2times)
Wow & Flutter ..... Below Mesurable Limit
Frequency Response ..... 5Hz-20kHz (±1dB)
Total Harmonic Distortion 0.005% (1kHz)
S/N Ratio (dB) 100dB
Dynamic Range 94dB
Channel Separation 96dB

General

Operating Voltage ..... 14.4V(11~16V)
Current Consumption ..... 0.8A at Rated Power
Installation Size ..... 250 (W) x 80 (H) x 176 (D) mm
9-13/16 (W) x 3-1/8 (H) x 6-13/16 (D) inch
Weight 2.0kg (4.4lbs)

KDC-CMP59FM

Disc section

Laser Diode ..... GaAIAs (λ =780nm)
Digital Filter (D/A) ..... 8 Times Over Sampling
D/A Converter 1Bit
Spindle Speed ..... 1000rpm~400rpm (CLV•2times)
Wow & Flutter ..... Below Mesurable Limit
Frequency Response ..... 10Hz-20kHz (±1dB)

RF MODULATOR

Modulation Frequency 87.7MHz-89.9MHz (200kHz)

General

Operating Voltage ..... 14.4V(11~16V)
Current Consumption 1.4A
Operating Temperature ..... -10~50°C

Installation size

CD Changer ..... 250 (W) x 80 (H) x 176 (D) mm
9-13/16 (W) x 3-1/8 (H) x 6-13/16 (D) inch
Controller ..... 43 (W) x 135 (H) x 22 (D) mm
1-11/16 (W) x 5-5/16 (H) x 7/8 (D) inch
Display Unit ..... 105 (W) x 40 (H) x 18 (D) mm
4-1/8 (W) x 1-9/16 (H) x 11/16 (D) inch
Hide-Away Unit ..... 150 (W) x 30 (H) x 80 (D) mm
5-7/8 (W) x 1-3/16 (H) x 3-1/8 (D) inch
Trim Plate ..... 188 (W) x 58 (H) x 2 (D) mm
7-3/8 (W) x 2-5/16 (H) x 1/16 (D) inch

Weight

CD Changer 2.0kg (4.4lbs)
Controller 0.050kg (0.11lbs)
Display Unit 0.125kg (0.28lbs)
Hide-Away Unit 0.600kg (1.3lbs)

KENWOOD follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

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